



# Improving HEALTH CARE for Veterans



1997 ANNUAL REPORT

OFFICE OF RESEARCH & DEVELOPMENT  
VETERANS HEALTH ADMINISTRATION  
DEPARTMENT OF VETERANS AFFAIRS

Improving  
**HEALTH  
CARE**  
for **Veterans**

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Kenneth W. Kizer, M.D., M.P.H.  
Under Secretary for Health

## Message from the Under Secretary

*“Nothing endures but change.”*

— Heraclitus, 500 BC

*“The health of the people is really the foundation upon which all their happiness and all their powers as a State depend.”*

— Disraeli, 1877

The Veterans Health Administration (VHA) is in the business of providing high quality, cost effective health care to veterans. The size and scope of the veterans healthcare system necessitate many inputs to ensure that we successfully meet our quality and value goals. VHA's Office of Research and Development plays a major role in this regard by assisting us in identifying “what works” and “what doesn't work” and by creating new knowledge that helps us provide better care.

The VHA research program covers the entire spectrum of biomedical, clinical, health services delivery and rehabilitation research, as well as technology assessments. Its many talented investigators, most of whom have multiple roles as clinicians, educators and investigators, are committed to veterans' health issues. Its administration, under the leadership of Chief Research and Development Officer, John R. Feussner, M.D., is responsive to the system's new and emerging needs and is committed to working closely with managers, researchers, clinicians and other decision makers to translate research into practice.

This first annual VA research report is designed to provide an overview of the VA Research and Development program structure and funding and to highlight recent VA research contributions to improved health care for veterans. I am delighted to provide you with this overview document, and I hope that it is a useful resource for you.

Kenneth W. Kizer, M.D., M.P.H.  
Under Secretary for Health  
Veterans Health Administration

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**John R. Feussner, M.D.**  
Chief Research and  
Development Officer

## Message from the Chief

*“ . . . every difference must make a difference. . . ”*

— William James

*“Research is good, results are better.”*

— Lyndon B. Johnson

This past year has been a year of change for VA's Office of Research and Development. We have made great strides in refining our research portfolio to focus on areas of unique or special concern to veterans. We have embarked on a strategic planning process that is moving us toward an integrated view of the Research Office and the reengineering of its key components: creating research policy, scientific peer review, research career development, dissemination and communications processes, budgeting and operations. Our very successful programs in medical research, cooperative studies, health services and rehabilitation research have begun to work together to identify synergies that amplify our activities and increase our overall value to veterans health.

We have made these changes purposefully to adapt to the changing veterans health care environment. To keep pace with societal and healthcare industry-wide forces, the Veterans Health Administration (VHA) has been reorganized over the past two years from a hospital based management structure into twenty-two Veterans Integrated Service Networks (VISNs) with an emphasis on primary care. Clearly these far reaching changes have created opportunities to strengthen the link between VA's mission of research and scientific discovery and its missions of providing high quality patient care and medical education.

Since the VA Research and Development program was created, VA research has made landmark contributions to veterans health care as well as to the overall health care community. VA research has resulted in actions that have, among other advances, saved lives by treating high blood pressure; prevented heart attacks, stroke, and death by promoting the prophylactic use of aspirin; and have revolutionized the design and development of prostheses thus making a range of athletic activities possible for people with lower limb amputations.

We have taken a close and critical look at our structure, our research priorities and the

internal and external stakeholders and dynamics that influence our decision making. As a result of our research portfolio review, the strategic planning process and the recommendations of the Research Realignment Advisory Committee, the Office of Research and Development has introduced a number of new initiatives this past year. The new initiatives cover all aspects of VA research and development, including health services delivery and quality of care, biomedical research, multi-center cooperative studies, and rehabilitation. Specifically, these new initiatives:



- expand health services research;
- create an epidemiologic research capacity;
- revitalize the Cooperative Studies Program;
- create new research training and career development pathways in all research disciplines;
- reassess the objectives of biomedical research;
- strengthen the portfolio of rehabilitation research; and
- promote an R&D infrastructure designed to best meet the needs of today's veterans.

These initiatives represent the cornerstone of the strategic planning effort that the Office of Research and Development has launched in order to better integrate the work of its four research services, rather than treat them as discrete units.

This annual report explores these initiatives in more detail, explains the current structure of the Office of Research and Development, and offers examples of how existing and new efforts will help improve the effectiveness of health care and efficiencies of health care delivery to our nation's veterans.

VA's Office of Research and Development has worked hard to be positioned and prepared to meet the challenges of a changing health care environment. We will continue to strive to "make a difference" in addressing the health care needs of veterans.

John R. Feussner, M.D.  
Chief Research and Development Officer  
Office of Research and Development  
Veterans Health Administration  
Department of Veterans Affairs

## VA RESEARCH AND DEVELOPMENT: ORGANIZATIONAL FRAMEWORK

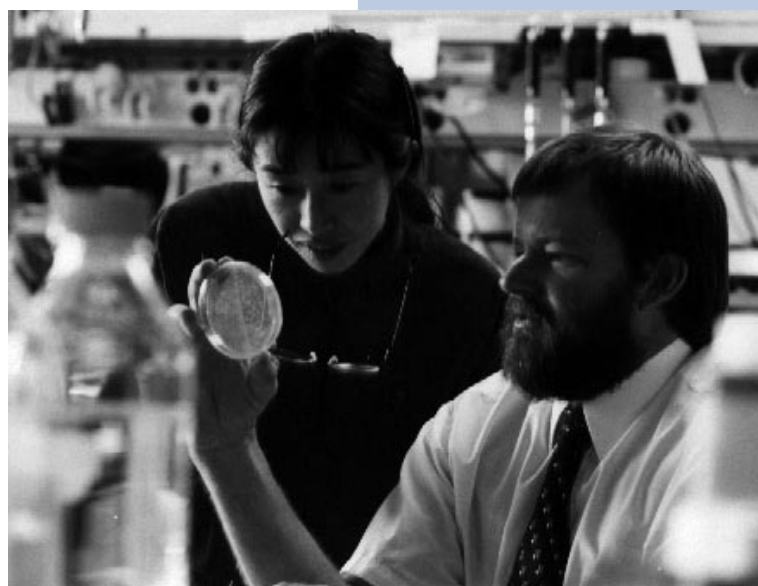
The Office of Research and Development allocates funds to support research projects among 115 VA facilities nationwide that currently participate in R&D activities.

The funded research projects are initiated by VA scientists on their own or in response to solicitations from the R&D headquarters. VA research is conducted in any number of ways: with VA medical centers; in collaboration with other federal government agencies; with non-government organizations such as universities or pharmaceutical companies; or any combination of these.

The Office of Research and Development oversees four services that explore all phases of veterans health care—Cooperative Studies, Health Services Research and Development, Medical Research, and Rehabilitation Research and Development.

The particular expertise of each of these four services allows the Office of Research and Development to explore the health care issues of importance to veterans from multi-dimensional perspectives, providing a more holistic view. In the treatment of diabetes, for example, one medical research Center for Diabetes focuses on the effects of diabetes on the vascular system that lead to increased heart attacks, stroke and peripheral vascular disease. Some Rehabilitation research in diabetes focuses on proper orthotic support, such as the design and use of customized insoles combined with depth-inlay shoes, to reduce limb-threatening ulcerations in diabetic patients. Health Services research helps design and test diabetic health care interventions and programs, such as the HSR&D study that found that diabetic veterans who received their care in a primary care practice model had improved blood sugar control and higher patient satisfaction. Through a large-scale, multi-center trial evaluating the safety and efficacy of an implantable insulin pump, the Cooperative Studies Program found that patients preferred the pump and had better blood sugar levels and quality of life than they did with multiple daily insulin injections. The Office of Research and Development successfully utilizes this four-pronged approach to tackle complex health care issues of special importance to veterans.

Following is a brief description of each of the four research services.





## Cooperative Studies Program

Statistical and methodological guidance in the conduct of CSP clinical trials is provided by four statistical Coordinating Centers that provide design, data management, statistical analysis and administrative support to all VA Cooperative Studies.

### **Cooperative Studies Program Coordinating Center**

Hines, Illinois  
William G. Henderson, Ph.D.,  
*Chief*

### **Cooperative Studies Program Coordinating Center**

Palo Alto, California  
Philip W. Lavori, Ph.D., *Chief*

### **Cooperative Studies Program Coordinating Center**

Perry Point, Maryland  
Joseph F. Collins, Sc.D., *Chief*

### **Cooperative Studies Program Coordinating Center**

West Haven, Connecticut  
Dorothea Collins, Sc.D.,  
*Chief*

CSP runs a Clinical Research Pharmacy to coordinate studies that involve drugs or medical devices.

### **Cooperative Studies Program Clinical Research Pharmacy Coordinating Center**

Albuquerque,  
New Mexico  
Mike R. Sather, M.S.,  
F.A.S.H.P., *Chief*

## Cooperative Studies Program (CSP)

Cooperative Studies began in 1946 with landmark research in the treatment of tuberculosis. The Cooperative Studies Program (CSP) has evolved into its own service within VA's Office of Research and Development, now encompassing the fields of: medical research, health services research, and rehabilitation research. CSP provides centralized proposal review and statistical and administrative coordination to VA investigators who wish to conduct multi-center clinical trials. Its mission is to conduct clinical research on health issues that are vital to our nation's veterans, to define research results that establish new standards of care and improve veterans' health, improve the efficiency of the VA health care system and improve the health of the population as a whole.



The Veterans Health Administration, with its many facilities and twenty-two networks, is an ideal place to conduct large-scale cooperative research. The CSP's strength lies in its ability to organize multiple medical centers within VHA to conduct more definitive research than may be achieved in single-site studies. CSP has sponsored a wide variety of studies from treatments for heart disease, cancer, AIDS, schizophrenia and prostate disease to dental implants and hearing aids; and from evaluation of geriatric care to provision of primary care to seriously ill patients.

VA Cooperative Studies are usually conducted over a five year period. In the course of a year CSP generally oversees 30 ongoing studies, 10 studies in planning and 15 in final analysis.

Although most studies are organized within the VA health care system, CSP has conducted a number of studies in partnership with the National Institutes of Health, the Department of Defense, and pharmaceutical corporations. More than 100 VA hospitals are involved in cooperative studies and thousands of veterans have participated in CSP research. Moreover, national medical experts often cite the impact of VA Cooperative Studies results on their medical practice.



# Health Services Research and Development

Research supported by the Health Services Research & Development Service (HSR&D) examines the effects of organization, financing, and management on a wide range of issues in health care delivery including: quality of care, access, cost and patient outcomes. HSR&D's key operating units are its nine field programs, each of which is a center of excellence in a particular domain of health services research, plus the Management Decision and Research Center (MDRC) which was established to facilitate the interaction between HSR&D and VHA senior managers and policy makers. HSR&D funding is awarded through the following programs:

## INVESTIGATOR-INITIATED RESEARCH (IIR)

HSR&D's peer-reviewed Investigator-Initiated Research (IIR) enables investigators at individual VA Medical Centers to conduct a wide range of health services research. The IIR Program emphasizes projects that will strengthen knowledge about and strategies for improving health care outcomes, access to care, cost and cost-effectiveness, assessment and assurance of quality, alternative organizational and delivery models, and the development of new research methods and measurement tools. A growing number of IIR projects are in areas HSR&D has targeted as high priority areas.

## CAREER DEVELOPMENT PROGRAM

The Career Development Program encourages VAMC clinicians and scientists to pursue HSR&D careers by providing stable research and salary support. Established in 1991, this program has been successful in fulfilling its mission to provide talented investigators with protected time to advance their research careers, increase the health services research knowledge of other VA clinicians/non-clinicians, and retain many talented clinicians and investigators in VA.

## CORE SUPPORT PROGRAMS

Core Support Programs are peer-reviewed programs designed to build or to help support health services research capacity system-wide. They include HSR&D Service Developmental Projects Program and four pre- and post-doctoral training programs in health services research and medical informatics (in collaboration with VHA's Office of Academic Affiliations).

## SERVICE DIRECTED RESEARCH

Service Directed Research (SDR) is solicited by HSR&D to address health care issues relating to the veteran population, the VA's system of health care networks, and the nation as a whole. SDR projects are conducted in response to mandates and requests from a variety of constituencies,

### Center for Practice Management & Outcomes Research

Ann Arbor, Michigan  
Rodney A. Hayward, M.D.,  
*Director*

### Center for Health Quality, Outcomes, and Economic Research

Bedford, Massachusetts  
Mark Prashker, M.D.,  
M.P.H., *Director*

### Center for Health Services Research in Primary Care

Durham, North Carolina  
Eugene Z. Oddone, M.D.,  
*Director*

### Midwest Center for Health Services and Policy Research

Hines, Illinois  
John Demakis, M.D.,  
*Director*

### Houston Center for Quality of Care and Utilization Studies

Houston, Texas  
Nelda Wray, M.D., M.P.H.,  
*Director*

### HSR&D Field Program for Mental Health

Little Rock, Arkansas  
G. Richard Smith, M.D.,  
*Director*

### Center for Health Care Evaluation

Palo Alto California  
Rudolf H. Moos, Ph.D.,  
*Director*

### Northwest Center for Outcomes Research in Older Adults

Seattle, Washington  
Stephan D. Fihn, M.D.,  
M.P.H., *Director*

### Center for the Study of Healthcare Provider Behavior

Sepulveda, California  
Lisa V. Rubenstein, M.D.,  
M.S.P.H., *Director*

### Management Decision and Research Center

Boston, Massachusetts  
Martin P. Charns, D.B.A.,  
*Director*

## PIVOT

The Prostate Cancer Intervention Versus Observation Trial, (PIVOT) is comparing radical prostatectomy (surgical removal of the prostate) with expectant management for men with early, localized prostate cancer. The potential cost to VA of a comprehensive screening and treatment program for prostate cancer may be from \$1.8-\$13 billion each year. As screening programs result in the diagnosis of more early cancers, it is crucial to determine the best treatment. If surgery is not the better option, men can be spared surgery's potential risk and negative impact on quality of life, and the savings to the health care system will be significant. If surgery saves lives, it will underscore the importance of early detection and treatment.

including Congress, federal agencies (e.g., Office of Management and Budget and the General Accounting Office), the Secretary, the Under Secretary for Health, the HSR&D Service, and other VA health care system managers and administrators.

### DISSEMINATION AND PUBLICATIONS

In addition to the hundreds of articles by HSR&D investigators that appear in peer reviewed journals annually, HSR&D places a high priority on targeted products and presentations to disseminate important findings to decision makers and the field. Examples include:

- *FORUM*, the HSR&D newsletter that brings useful information, questions, observations and comments to the attention of VA clinicians, managers and health services researchers;
- *Primer* series, whose question and answer format provides a broad audience with a tool for explaining complex health care issues;
- *Management Briefs*, which provide senior managers with HSR&D research results in a concise and timely manner and in language that is easily accessible;
- HSR&D/Veterans Integrated Service Network Directors Committee, a group representing both VHA network decision makers and HSR&D, that meet regularly to ensure that research findings inform management decisions and policy making and that management needs inform research questions;
- *Transition Watch*, a quarterly publication that provides managers in both headquarters and the field with information about organizational changes in VA and specifically about implementation of service lines, quality initiatives and hospital integrations.



## Medical Research Service

The primary goals of the Medical Research Service are to support high quality biomedical research relevant to veterans' health and illnesses, develop and enhance an intramural research environment that promotes the conduct of research, and attract and retain productive biomedical research scientists. The Medical Research portfolio is largely VA investigator-initiated and peer-reviewed by nationally recognized scientific experts. While the research is not centrally directed, the Medical Research Service targets 17 disease categories that are highly prevalent in the veteran population and funds research centers that specifically focus research efforts.

### MERIT REVIEW PROGRAM

The Medical Research Service, through its Merit Review Program, funds individual scientists and works toward assuring adequate time for researchers to pursue their research goals. Researchers who are funded through the Merit Review Program focus their efforts on etiology, pathogenesis, diagnosis, and treatment of a wide range of diseases and disorders affecting the veteran population.

To strengthen the Merit Review Program, the Medical Research Service has taken two major steps over the past year:

- The Service increased the number of awards in a funding cycle—from 112

## FUNDED RESEARCH CENTERS

Special Research Centers receive core funding to support a coordinated research program

CENTER	LOCATION
<b>Alcohol</b>	West Haven, Connecticut; Omaha, Nebraska; Denver, Colorado
<b>AIDS &amp; HIV Infection</b>	Atlanta, Georgia; Durham, North Carolina New York, New York; San Diego, California
<b>Schizophrenia</b>	Denver, Colorado; Brockton, Massachusetts; West Haven, Connecticut
<b>Environmental Hazards</b>	Boston, Massachusetts; East Orange, New Jersey; Portland, Oregon; Louisville, Kentucky
<b>Diabetes</b>	San Diego, California; Iowa City, Iowa; Nashville, Tennessee

in Fall 1995 to 143 in Fall 1996, a 27% increase; and

- Together with the HSR&D and RR&D services, the Medical Research Service will revitalize the Career Development Program for clinician scientists.

The Medical Research Service has also worked to retain and enrich research expertise that is relevant to VA's research priorities by creating a new program for first-time principal investigator applicants to enhance their competitiveness for merit review awards and by introducing a program that provides bridge funding to applicants who are between awards to ensure continuity of their work.



## Medical Research Priorities

- aging, autoimmune allergic, and hematopoietic disorders;
- cancer;
- chronic disorders of the gastrointestinal system;
- chronic infectious disease;
- chronic renal disease;
- central nervous system injury and associated disorders;
- degenerative diseases of bones and joints;
- dementia and neuronal dysfunction and degeneration;
- diabetes and major complications;
- emerging pathogens;
- environmental exposure (dermal and pulmonary);
- major psychoses, mood disorders, and stress;
- sensory disorders;
- substance abuse (alcohol, drug, nicotine);
- trauma and wound healing;
- vascular diseases.

### MINORITY RECRUITMENT INITIATIVE

The Medical Research Service also oversees the Minority Recruitment Initiative, which involves a Research Training Initiative for Historically Black Colleges and Universities (HBCUs) and Hispanic-Serving Institutions (HSIs). The initiative's primary objectives are to create collaborative research activities between VA and these institutions, strengthen the research skills of their faculty scientists, stimulate their students' interest in pursuing VA careers in biomedical and biobehavioral research, and enhance VA's efforts to address the health care needs of the country's African American and Hispanic American veterans. Funded programs have examined a wide range of medical issues, including non-insulin-dependent diabetes mellitus, hypertension, sickle cell anemia, lung cancer, and leukemia, to name a few. To date, 30 faculty scientists representing 20 minority-serving institutions in 11 states have participated in this program. A total of \$4,605,495 has been allocated for the applications selected for funding under the first three cycles of review; a fourth review cycle is under way for funding in fiscal year 1998.

### DEPARTMENT OF DEFENSE

Medical Research Service coordinates VA's collaboration with the Department of Defense in areas of common interest to VA and the DoD. Projects selected within four agreed upon initiatives are slated to be funded beginning in fiscal year 1998. (See VA Research Collaborations.)

### NATIONAL INSTITUTE ON DRUG ABUSE (NIDA): NIDA/VA

#### SUBSTANCE ABUSE MEDICATION DEVELOPMENT RESEARCH UNITS

These units serve as centers for conducting Phase I, II, and III drug trials on pharmacotherapeutic compounds for the treatment of substance abuse and addiction. Five sites were selected for these centers: Boston Outpatient Clinic, New York/Northport, Philadelphia, Cincinnati, and West Los Angeles. A total of \$41,411,259 will fund projects from 1995 to 1999.



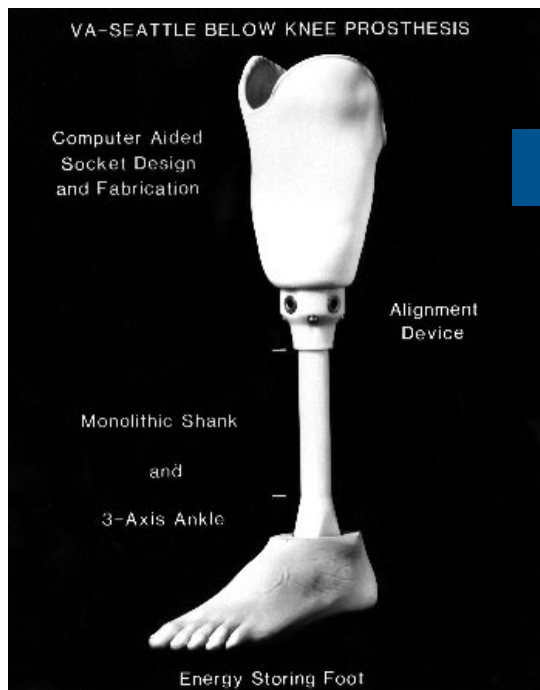
## Rehabilitation Research and Development

Since World War II, Rehabilitation Research and Development (RR&D) has been the nationally recognized leader in disability research to benefit veterans with amputations, spinal cord injury, vision impairment, hearing loss, or multiple communication disorders. As the average age of veterans has increased, RR&D has established research priorities in rehabilitation of disabilities caused by aging.

RR&D investigations focus on concepts, products, and processes that promote greater functional independence and improve quality of life for veterans who have been disabled as a consequence of trauma or disease. RR&D accomplishes these important goals through its diverse programs listed below.

### INVESTIGATOR-INITIATED RESEARCH

RR&D is committed to giving priority funding to ideas that arise from rehabilitation professionals treating veterans. Approximately 75% of the Service's resources fund proposals through a national peer review and evaluation process. Products such as the Seattle foot, a prosthetic foot designed for use with either an above knee or below knee prosthesis, have been developed through this program.



### REHABILITATION RESEARCH CENTERS

RR&D Centers cultivate communities of scientific investigators and clinicians focused on the many domains of human rehabilitation. Through this program, VA is able to direct resources toward areas of identified need to benefit veterans with disabilities. In response to an FY 97 Office of Research and Development request for applications, funding was awarded for six new Rehabilitation Research and Development Centers of Excellence. The new centers will focus on rehabilitation for physical disabilities due to traumatic accidents and injuries as well as stroke, falls, and degenerative musculoskeletal or neurologic diseases. The rehabilitative services to be studied will include those designed to restore or compensate for lost ambulation, speech, vision, aging with a disability and other functions that affect independent living and quality of life.

### TECHNOLOGY TRANSFER

RR&D actively seeks to transfer technology into the VA health care delivery system through its Technology Transfer activities. These activities provide for coordination of new prototype and technique development

### REHABILITATION RESEARCH & DEVELOPMENT CENTERS

#### VA Atlanta RR&D Center

Joseph G. Ouslander, M.D.,  
*Director*  
Focus Areas: Geriatric Rehabilitation, Low Vision

#### VA Cleveland RR&D Center

Hunter Peckham, Ph.D.,  
*Director*  
Focus Area: Functional Electrical Stimulation

#### VA Houston RR&D Center

Arthur M. Sherwood, Ph.D.,  
*Director*  
Focus Area: Aging with a Disability

#### VA Palo Alto RR&D Center

Felix E. Zajac, Ph.D.,  
*Director*  
Focus Areas: Rehabilitation Engineering and Spinal Cord Injury

#### VAPortland RR&D Center

Stephen Fausti, Ph.D.,  
*Director*  
Focus Area: Aural Rehabilitation

#### VAPuget Sound RR&D Center

Bruce J. Sangeorzan, M.D.,  
*Director*  
Focus Areas: Prosthetics and Consequences of Amputation



## Revolutionizing Prosthetics

Researchers at VA Medical Centers at Seattle, Chicago (Lakeside) and New York evaluated computer aided design and manufacture technology for applicability to prosthetic fitting, design, and manufacture. The result revolutionized the prosthetics industry. A cumbersome trial and error process that took weeks was reduced to one day.

The process created a more exact fit of the prosthesis to the residual limb. Today, persons with amputations can engage in far more activities of choice, including sports like running, skiing and basketball, because of this improved interface. Moreover, VA evaluations indicate that this superior product can be provided to veterans at an annual savings of \$10 million.

to facilitate prompt transfer of promising products and processes into commercial production and clinical use. Evaluations of prosthetic limbs, wheelchair designs and vision enhancements have all resulted in improved products for use by veterans and within the nation's health care system.

### SCIENTIFIC AND TECHNICAL PUBLICATIONS

RR&D promptly disseminates information about its rehabilitation and engineering projects among scientists, engineers, clinicians, and veteran consumers through the quarterly *Journal of Rehabilitation Research and Development* and its compan-

ion publications. The Journal has received international recognition as the only publication of its type to offer comprehensive coverage of all disciplines in rehabilitation research.

### CAREER DEVELOPMENT

The newest of RR&D programs, Career Development provides a structured system for mentoring new researchers with future promise of having an impact on the rehabilitation and disability management field. Currently funded post-doctoral awardees are pursuing studies in Cerebrovascular Disorders, Audiology, Gait, and Rehabilitation Engineering.



## VA RESEARCH COLLABORATIONS

VA research is further enhanced through collaborative arrangements with other government agencies and with non-government entities. Important current collaborative activities are those with the Department of Defense, several institutes at the National Institutes of Health, the Juvenile Diabetes Foundation and pharmaceutical companies.

## Government Collaborations

**VA/DEPARTMENT OF DEFENSE (DoD) COLLABORATIVE RESEARCH PROGRAM,** will study four areas of common interest to VA and the DoD:

### **MECHANISMS OF EMERGING PATHOGENS**

Under this three-year initiative, investigators aim to find ways that newly discovered microorganisms become infectious to humans; identify the ways existing infections change to cause more serious disease; examine the effects of climate, ecological, and population changes on the spread of infections; and determine the ways in which pathogenic organisms infect immunosuppressed individuals. Eighteen proposals will be funded and are slated to begin October 1997.

### **COMBAT CASUALTY AND WOUND REPAIR**

This three-year initiative will fund research that examines: cellular and molecular biology issues that affect tissues and organs during shock and trauma; immediate and delayed effects of thermal injury such as burns and frostbite; and abnormal wound healing, to name a few. Nine proposals will be funded, with a January 1, 1998, start date.

### **STRESS RELATED CHRONIC ILLNESSES, INCLUDING POST-TRAUMATIC STRESS DISORDER (PTSD) AND RELATED GULF WAR ILLNESSES**

In this three-year project, researchers will study the biological aspects of traumatic and non-traumatic stress related disorders, for example, the role of the nervous, endocrine (hormone), and immune

systems on the stress reaction, and the identification of genetic markers which might be associated with control of stress responses and PTSD. Twelve proposals will be funded and are expected to begin June 1, 1998.

### **PROSTATE DISEASE, INCLUDING PROSTATE CANCER**

Slated to begin in fiscal year 1998, this three-year initiative will address the cellular and molecular biology concerning the pathogenesis of prostate cancer, diagnostic developments, and treatment of benign and malignant prostate diseases. Up to ten proposals will be funded beginning in September, 1998.

### **VA/DEPARTMENT OF DEFENSE, HEALTH AND HUMAN SERVICES AND ENVIRONMENTAL PROTECTION AGENCY**

VA, through the Research Working Group (RWG) of the Persian Gulf Veterans Coordinating Board leads the federal research effort on Persian Gulf veterans' illnesses. VA's Chief Research and Development Officer chairs the RWG which is composed of scientific leaders from VA, HHS, DoD and EPA. The RWG developed *A Working Plan for Research on Persian Gulf Veterans' Illnesses* to guide federal decision makers in establishing research priorities and providing information to members of Congress, the scientific community, the public and the veterans of the Persian Gulf conflict, about the manner in which the federal government is carrying out important research on Persian Gulf veterans' illnesses.





A CSP study of patients with a certain type of heart attack called Non-Q-Wave Infarction, found that these patients can be managed using non-invasive testing rather than invasive angiography.

Study results showed decreased mortality among persons treated non-invasively in the early stages following a heart attack and up to three years later, compared with the use of angiography.

## VA and Department of Health and Human Services Collaborations

VA collaborates on important research with a number of Institutes within the National Institutes of Health and with the Agency for Health Care Policy and Research. Examples of these collaborative relationships follow:

**NATIONAL INSTITUTES FOR HEALTH**  
VA collaborates with a number of Institutes on a variety of projects including:

The *National Heart, Lung and Blood Institute* and VA are collaborating on a major cooperative study called the Beta-Blocker Evaluation of Survival Trial (BEST).

The *National Cancer Institute*, and VA with additional support from the *Agency for Health Care Policy and Research*, collaborate on the Prostate Cancer Intervention Versus Observation Trial (PIVOT): a randomized trial comparing radical prostatectomy versus palliative expectant management for the treatment of clinically localized prostate cancer.

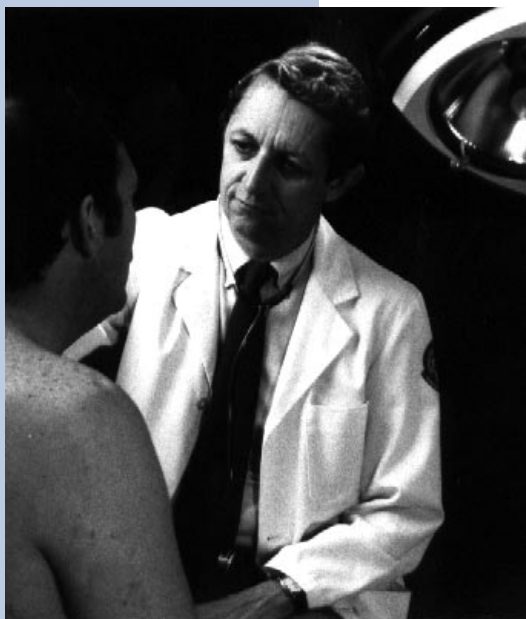
The *National Institute on Deafness and Other Communication Disorders* and VA are working together on a hearing aid clinical trial.

The *National Institute on Drug Abuse* and VA are working together on several studies including the evaluation of drugs for treating heroin addiction which are less addictive than methadone and cannot be abused, to expand the ability of VA to treat these patients as well as evaluating treatments for cocaine addiction, the most critical part of the nation's drug abuse epidemic.

### AGENCY FOR HEALTH CARE POLICY AND RESEARCH

The *Agency for Health Care Policy and Research* and VA work together in a number of ways including:

- By collaborating with AHCPR to encourage VA participation in a set of Evidence-based Practice Centers, VA has formed partnerships with other medical and research organizations to produce "evidence reports" that will provide clinicians and health care organizations with state-of-the-art scientific information on the effectiveness of treatments for common, costly medical conditions.
- VA's Chief Research and Development Officer serves on the AHCPR Advisory Council and selected AHCPR individuals have served as VA peer reviewers.



- AHCPR and VA are collaborating on a Cooperative Study of a comparison of subcutaneous and intravenous administration of recombinant human erythropoietin in dialysis patients.
- Together with the National Cancer Institute, AHCPR and VA are collaborating on the PIVOT trial mentioned above.



## Industry Collaborations

Private industry, particularly biotechnology and pharmaceutical companies, also collaborate with the Office of Research and Development on major research initiatives. These collaborations have included financial support and/or donated drugs in support of large scale clinical trials. In FY 97 industry collaborators have included, Amgen, Astra Merck, CPEC, DuPont, Glaxo-Wellcome, Hybritech, Intercardia, Marion Merrell Dow, Warner Lambert/Parke-Davis, Bayer Corporation, Boehringer Ingelheim, Hoescht Marion Roussel, Rhône-Polenc Rorer, Sandoz, Schein Pharmaceuticals and Schwartz Pharmaceuticals.

## VA/Juvenile Diabetes Foundation (JDF) Diabetes Research Centers

In 1995 VA and JDF entered into an agreement to jointly fund up to six Diabetes Research Centers to study Type I and Type II diabetes, with a focus on clinical complications. In fiscal year 1997 three VA medical centers, Iowa City, San Diego, and Nashville, competed successfully for funding. The Iowa City Diabetes Research Center will focus on ways that vascular function is affected by diabetes mellitus; the San Diego Diabetes Research Center will investigate insulin resistance in Type II diabetes; and the Nashville Diabetes Research Center will study the adverse side effects, such as hypoglycemia and obesity, often associated with intensive diabetes treatment.



## FUNDING: BUILDING BRIDGES TO INNOVATION

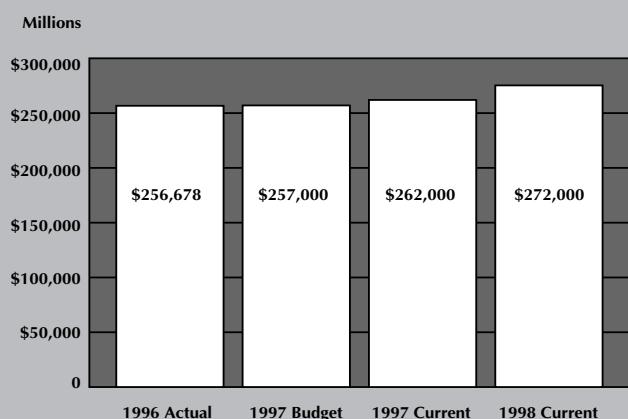
The Office of Research and Development administers the research appropriation for Medical Research, Rehabilitation Research and Development, Health Services Research and Development, and Cooperative Studies. These funds currently support research projects conducted

by over 2300 VA medical center employees in 115 VA facilities. These projects are either initiated on the basis of VA employees' own scientific interests or in response to invitations from the R&D Office in Headquarters.

The number of R&D funded research projects is contingent on the level of appropriated resources, and the average cost per project. The nature and quality of this research are influenced by identified priorities that focus efforts on the veteran patient population and the training, interests and availability of research time for VA's health care providers/investigators.

### APPROPRIATION HIGHLIGHTS

#### BUDGET AUTHORITY



### SUMMARY OF BUDGETARY RESOURCES (DOLLARS IN THOUSANDS)

	1995 Actual	1996 Actual	1997 Estimate
Medical and prosthetic research appropriation	\$251,426	\$256,678	\$262,000
Medical care support	377,748	334,700	328,273
Federal grants	185,102	209,470	216,800
Other grants (voluntary agencies)	97,566	105,903	109,600
DoD reimbursements*	14,242	16,242	15,376
<b>Total budgetary resources</b>	<b>\$926,084</b>	<b>\$922,933</b>	<b>\$932,049</b>

\* For each year Medical and Prosthetic Research receives DoD reimbursement, partial funding lapses to the next fiscal year.

### DEPARTMENT OF DEFENSE/VA COLLABORATION (DOD/VA)

The DOD/VA Collaborative Research Program has helped increase funding opportunities for VA investigators by infusing additional funds into the VA research program. Generally, VA and DOD investigators are eligible to compete for funding in designated areas. A large portion of the funds is spent on joint efforts regarding Persian Gulf related illnesses, Post Traumatic Stress Disorder (PTSD), combat trauma, prostate cancer, and emerging pathogens. Projects have been funded in all of these areas and are set to begin in FY 1998.

## Outside VA or Extramural Sources

The ability of VA researchers to leverage funds from other federal agencies, foundations, nonprofit agencies, and various external sources has allowed the Office of Research and Development to continue to conduct health research in varied environments and patient settings. Over the past few years, VA researchers have competed more actively and have been successful in obtaining non-VA research funding. This trend of increasing extramural funds indicates that R&D researchers compete well against top

researchers elsewhere and that VA sustains a level of research funding sufficient to continue to attract and retain high quality researchers.

The Office of Research and Development is working to expand its efforts to collaborate with non-government entities, such as foundations and with pharmaceutical and technology development companies, which are helping to fund several multi-center clinical trials. In 1996, 59% of all research projects initiated by VA investigators were funded by extramural, or non-VA funds.

### Research efforts lower incidence of pressure ulcers

Pressure ulcers cause a great deal of pain and suffering among patients in long-term care facilities that, for the most part, could be prevented. HSR&D's research into the causes, prevention and treatment of pressure ulcers has led to a 25 percent reduction in pressure ulcer development among long-term care patients studied. As a result, VA is now examining ways to further improve pressure ulcer care through use of clinical practice guidelines and long-term care performance measures.

*Berlowitz DR and Halpern J. Evaluating and improving pressure ulcer care: the VA experience using administrative data. Joint Commission Journal on Quality Improvement, August, 1997.*



## Stroke Rehabilitation

Several studies directed at improving the functional capacity and capabilities of stroke victims are underway by rehabilitation investigators. These include:

- research to determine the efficacy of functional electrical stimulation in the lower extremities for improving motor recovery and gait patterns;
- development of two modifications to “constraint-induction” therapy designed to improve motor function deficits;
- evaluation of a graded weight-bearing regime designed to improve the lower limb mobility function of veterans with post-stroke hemiplegia;
- a study of central mechanisms responsible for restitution of wrist movement.

## NEW INITIATIVES IN 1997

The evolution of health care, both within and outside VA, has had a significant effect on research priorities. Veterans Affairs’ Secretary Jesse Brown established a Research Realignment Advisory Committee in FY 1996 to assess the focus of VA research efforts and its appropriateness to the needs of veterans. As a result of the final report of the committee released in early FY 1997, the Office of Research and Development launched a number of new initiatives. These new initiatives focus VA’s research portfolio specifically on areas of unique or special interest to veterans. Some examples of these new initiatives follow.

### EPIDEMIOLOGICAL RESEARCH AND INFORMATION CENTERS

An important Research and Development initiative is the creation of the Epidemiological Research and Information Centers. As a research paradigm, epidemiology is well-suited for addressing the process and distribution of chronic diseases among various subgroups of veterans. To promote a greater interplay between clinical practice and the epidemiology of medical care, the Office of Research and Development requested applications, reviewed, and then funded three Epidemiological Research and Information Centers. Centers will develop studies that address such issues as the use of risk assessment, surveillance and control

techniques, and population-based epidemiological surveys that can be targeted toward selective health behaviors.

### NURSING RESEARCH INITIATIVE

A Research and Development initiative managed by HSR&D, the Nursing Research Initiative has been in operation for three years and is currently funding eight new research studies conducted expressly by nurse investigators. Proposals to date include studies that explore a range of areas: psychophysiology of post-traumatic stress disorder in female nurse veterans of Vietnam; daily living with chronic disease; physical activity counseling of primary care patients; cultural barriers to access to VA blind rehabilitation services; patients at risk of developing pressure ulcers; an intervention to reduce falls among elderly veterans; and women with spinal cord injuries.

### INTERFACE OF MANAGED CARE AND PRIMARY CARE

HSR&D has funded several projects aimed at answering timely questions about how VHA’s simultaneous movement toward managed care and more primary care affects important patient and system outcomes. Investigators will focus on questions whose answers will have immediate importance for guiding the continuing changes in the VA system or for providing baseline data that will be essential in continuing efforts to monitor and manage change.



### **GENDER DIFFERENCES IN HEALTH CARE AND IMPROVING HEALTH SERVICES FOR WOMEN VETERANS**

HSR&D continues to support research on women veterans' health, including research on improving outcomes and increasing access for women veterans, breast cancer, reproductive health, post-traumatic stress disorder, sexual abuse, mental illness, and alcohol and substance abuse. This new initiative funds work that explores gender differences in veterans' health care or investigates problems identified in non-veteran female populations that have not been studied among female veterans.

### **EVALUATION OF A COMPUTER ASSISTED NEUROPSYCHOLOGICAL SCREENING BATTERY**

Many neurological conditions can have an effect on the functioning of the brain in different areas such as cognition, memory, vigilance, and motor skills. Measurement of these functions can be of critical importance in the diagnosis of different neurological disorders and in determinations of their severity. This CSP study will evaluate a brief computerized battery of tests for patients referred for neuropsychological testing. This test battery can be an important adjunct in evaluating patients for the effects of exposure to neurotoxic environmental pollutants, such as in Persian Gulf veterans.



### **THE CORONARY ARTERY REVASCULARIZATION PROPHYLAXIS TRIAL (CARP TRIAL)**

Cardiovascular disease accounts for 1 million deaths/year and is the leading cause of death among Americans. Studies have shown that in patients scheduled for elective vascular surgery, the frequency of coronary artery disease exceeds 50%. It is not surprising therefore, that the leading cause of complications is "post-operative cardiac morbidity" (defined as the occurrence of heart attacks, unstable angina, congestive heart failure, arrhythmia, and cardiac death). This CSP study is designed to answer the question: Should prophylactic coronary artery revascularization (surgical restoration of blood flow to the heart) be performed prior to elective vascular surgery?



### **DIABETES MELLITUS (TYPE II) RESEARCH**

The Cooperative Studies Program recently released a research priority announcement for the conduct of multi-site, randomized clinical trials that will address the effectiveness of treatment and clinical management of Diabetes Mellitus (Type II).

### **MANAGING ACCESS TO IMPROVE OUTCOMES**

Access to VHA health care is affected by a variety of managerial and policy decisions, including eligibility criteria, clinical protocols, referral practices, staffing patterns, and service location and capacity. Network Directors participated in developing this initiative which will fund studies that focus on the effects of interventions intended to enhance, restrict or redistribute access across populations or places.

### **ESTABLISHMENT OF A NEW HSR&D FIELD PROGRAM**

HSR&D Field Programs are "Centers of Excellence" in selected health services research focus areas that provide the primary means of enhancing VHA's technical expertise in the area of patient outcomes research. Nine Centers of Excellence currently receive core funding and this solicitation will establish a tenth Center.

### **REHABILITATION OUTCOMES**

Research focused on the outcomes of rehabilitation services provided by VHA will be initiated. The work will have a broad scope encompassing rehabilitation for physical disabilities due to traumatic accidents and injuries as well as stroke, falls, and degenerative musculoskeletal or neurologic diseases.

### **CAREER DEVELOPMENT**

Career Development was identified by the VA Research Realignment Advisory Committee as a vital area of the Research and Development program that should be continued and expanded. The Office of Research and Development has taken steps to improve the recruitment, training and retention of outstanding clinician investigators. Announcements have gone out to the field accepting applications for a number of career development awards.

Rehabilitation Research & Development established a Career Development program in 1997 to nurture promising VA investigators interested in disability research. In addition, a pre-doctoral fellowship program has been established through the Office of Academic Affiliations.

Medical Research Service and Health Services Research and Development continue to support their Career Development Programs first established in 1956 and 1991 respectively.



## OUTLOOK FOR VA RESEARCH IN FY 1998

The research described in the preceding pages represents an incredible set of resources within VA – creative and committed investigators, a nationwide system of facilities and support staff, and a large and increasingly diverse patient population. Looking ahead to 1998 and beyond, VA will continue to expand these resources, better integrate our research services, further leverage research dollars, and enhance capacity to disseminate new information rapidly and effectively.

*Human resources:* The future success of VA research depends on our ability to retain and develop our unique *all-intramural* research team. Increased competition for both VA and non-VA funding ensures that successful VA investigators are extraordinarily capable researchers. At the same time, because they are VA employees, these investigators have a special relationship with veterans and with the institutions in which veterans receive health care; and, because so many have dual roles as clinician and investigator (within VA and external institutions), their research is informed by multiple perspectives. To maintain and nurture a large and talented pool of investigators, we have a variety of Career Development programs, which we will continue to develop and “grow” over the coming years.

*Integrated programs:* VA research covers the entire spectrum from basic biology to clinical studies, to health services research, to demonstrations and evaluations of management strategies and technology assessments. The establishment of Designated Research Areas that cut across the traditional boundaries of our Medical, Health Services, and Rehabilitation programs marks a new commitment to recognizing and developing the potential *synergy* of our various research activities. Major initiatives in the coming years will reflect the conviction that solving complex health problems requires specialized expertise as well as continual synthesis, re-examination of the issues, and communication.

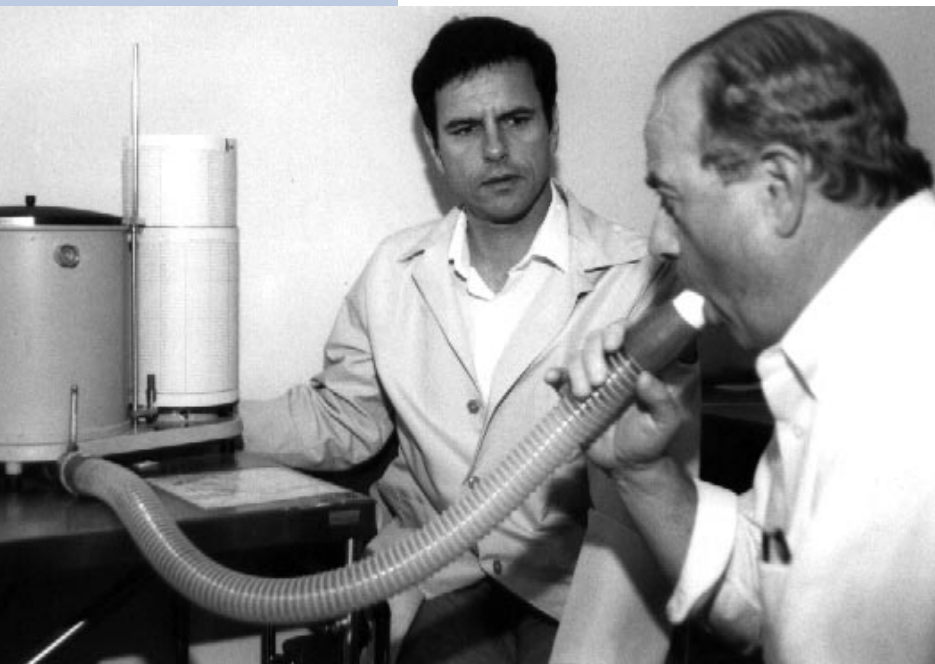
*Clear priorities:* While we take pride in knowing that VA-sponsored research has importance to the nation and often to the scientific community worldwide, the primary concern of all VA-sponsored research is U.S. *veterans*. The adoption of Designated Research Areas, and the more specific priorities within each, is an attempt to be clear about the categories of research questions within our scope. We are developing a set of priorities that is clear, manageable, and unique to VA. Already, the vast majority of ongoing research projects fits into these areas. We are now working to develop capacity, via internal data management systems and the Internet, to increase awareness of these priority areas and our accomplishments in each.

The Office of Research and Development is funding four centers for AIDS research in the Atlanta, Durham, New York, and San Diego VA medical centers. Researchers at the Georgia Research Center for AIDS and HIV Infection in Atlanta will define the spectrum of HIV disease and develop new agents that may be effective against HIV and associated infections. Among the many studies the Durham Research Center for AIDS and HIV Infection has conducted since 1988 when it was established is a new project that will study HIV preparedness among almost 2,000 at-risk injection drug users eligible for care within the VA in three cities—Baltimore, New York City, and Washington, D.C.

*Leveraged dollars:* Sufficient, and stable research funding is critical to our success. We encourage appropriate collaborations with other Federal agencies, especially the National Institutes of Health and the Department of Defense, private foundations and institutions, and private corporations. VA's Cooperative Studies Program sponsors several major projects that exemplify successful collaborations. Over the coming years, we will continue to seek new mechanisms and new funding partners within and outside government, and to be accountable for all our research investments.

*Research utilization:* We are seeking new ways to get VA research findings into the hands of potential users — patients, clinicians, administrators, policymakers and scientists. To accomplish this, we are building communication with VA policymakers and clinical managers in Headquarters and the individual Networks, encouraging investigators to present plans for disseminating their findings, and designing a new information system for rapidly “getting the word out.”

This report on VA research, the first of our planned annual reports, sets the stage. We are proud of the quality and quantity of the work described herein and the strong tradition on which it is built. At this juncture, we are looking forward — to reporting on the research completed in FY 1997 and the new work launched in 1998, and to seeing the results of our increasingly integrated research plan.



## HIGHLIGHTS

### AGING • CHRONIC DISEASES

## HIGHLIGHTS FROM FY 1997

Research that enhances veterans health care is one of the four missions of the Department of Veterans Affairs. The Office of Research and Development carries out this mission by setting research policy and direction and overseeing the work of its four productive services. In a given year, VA-affiliated investigators publish about 3000 papers in Clinical Medicine and about 1000 in Biomedical Research. Highlighted below by major health care categories, are a mix of some of the most significant on-going or new studies VA has conducted on a range of health care conditions and issues in FY 1997 and VA research findings published in FY 1997.

### AGING

At the Seattle VA Medical Center, investigators have identified the genetic defect in Werner's syndrome, an inherited disorder that causes premature aging in multiple organ systems. This finding may help to identify targets for diagnostic and treatment strategies for age-related organ dysfunction.

A current CSP study, Evaluation of Geriatric Evaluation and Management Units and Geriatric Follow-up, will examine the value of specialized inpatient and outpatient units for geriatric care. The results will inform how VA will care for the most rapidly growing segment of the veteran population as health care systems move toward managed care.

Home-based primary care (HBPC) holds great potential for lowering total health care and hospital readmission costs among severely disabled and terminally ill patients. A new study will investigate whether these and other benefits can be conferred among other VA patients as well. Although the study is still in an early stage, it has already had an impact on policy at several VAMCs that had been considering closing their HBPC programs because of financial constraints. It is hoped that this project will identify a new role for HBPC in VA's evolving long-term care strategy for veterans.

### CHRONIC DISEASES

#### CANCER

A VA prostate cancer study will examine patient involvement in treatment decisions. Some research has suggested that patients who are more active in their treatment decisions tend to be more satisfied with the results. HSR&D researchers examining this issue will shed light on decision making for prostate cancer and help design better interventions to encourage informed decision making in men with prostate cancer.

A CSP trial, 18-F-Fluorideoxyglucose (FDG) Positron Emission Tomography (PET) Imaging in Patients with Solitary Pulmonary Nodules, will assess whether this diagnostic method can be used to accurately determine if solitary pulmonary nodules are malignant. The study will attempt to determine the cost and benefit of this technology through its ability to screen patients and avoid unnecessary procedures and for its potential to improve outcomes.

A CSP trial, Prospective Evaluation of Risk Factors for Large Colonic Adenomas in Asymptomatic Subjects, will identify patients with and

## HIGHLIGHTS

### CHRONIC DISEASES

without colonic adenomas by colonoscopy and follow them for five years to determine the appropriate interval for follow-up colonoscopies in patients with no initial adenomas or small adenomas. The study will attempt to identify risk factors for colon cancer and determine the appropriate follow-up intervals for screening.

#### BENIGN PROSTATIC HYPERPLASIA

Most men over the age of 50 experience enlargement of the prostate gland, which surrounds the male urethra. This enlargement, benign prostate hyperplasia (BPH), results in problems with urination. Previous treatment for this condition included surgical removal of portions of the enlarged prostate gland. Healing after this procedure is slow. A new tool for removing excess tissue, a laser, was evaluated in this study. Evaporation of prostate tissue by laser surgery for the treatment of symptomatic BPH is safe and efficient.

#### NEUROLOGY

A recently completed and yet-to-be released CSP study, Treatment of Status Epilepticus, examined four drugs that are commonly used to treat this disorder which poses a life-threatening state of prolonged epileptic seizures. Preliminary results of the study show that one of the drugs is not as effective as the others. There were also differences in the ease of administration between the drugs, which may help make emergency care simpler.

#### ALZHEIMER'S DISEASE

There is a wide range in age related onset for chromosome 1-related familial Alzheimer's disease. Studies have indicated that identical changes in three specific chromosomes are related to inherited forms of Alzheimer's disease. Changes in chromosome 14 caused an earlier onset of the disease than changes in chromosome 1, which caused onset at an age similar to the more common form of Alzheimer's disease. Studies of the genetic and environmental factors that contribute to delayed onset of the disease in individuals with chromosome 1 changes are now under further study.

#### VASCULAR DISEASE

Cholesterol screening guidelines by HSR&D researchers have nationwide impact. HSR&D researchers wrote clinical practice guidelines on cholesterol screening for the American College of Physicians that were published in the *Annals of Internal Medicine* and distributed to physicians nationwide. These guidelines consist of seven specific recommendations and supporting evidence for cholesterol screening. Garber AM, Browner WS, Mazzaferri EL, et.al. Guidelines for using serum cholesterol, high density lipoprotein cholesterol, and triglyceride levels as screening tests for preventing coronary heart disease in adults. *Annals of Internal Medicine* 124:515-17, 1996.

A study shows benefits of "clot-busting" drugs compared with angioplasty. Balloon angioplasty is an established method for opening blocked arteries, but it is not always feasible for VA hospitals that do not have the staff or facility to support this procedure. This study showed that "clot-busting" drugs achieved similar outcomes to those of angioplasty at \$3,000 less per patient. This approach not only produces excellent outcomes at less expense; it also spares heart attack patients the risk of an invasive procedure. Every NR, Parsons LS, Hlatky M, et.al. A comparison of

## HIGHLIGHTS

### CHRONIC DISEASES

*thrombolytic therapy with primary coronary angioplasty for acute myocardial infarction. New England Journal of Medicine 336:1253-60, 1996.*

An ongoing CSP trial in secondary prevention of heart disease, the VA HDL Intervention Trial, will compare gemfibrozil versus placebo in improving cholesterol levels. Results of the study could have cost saving implications if gemfibrozil is effective and could be used in place of expensive statin drugs.

The Beta-Blocker Evaluation of Survival Trial (BEST), an international trial sponsored jointly by VA and the National Heart, Lung and Blood Institute, is aimed at determining whether patients in the United States and Canada with moderate to severe heart failure live longer on beta-blockers compared with patients on placebo. Within the main study, five substudies will also be conducted to examine: physical aspects of heart functioning; the relationship between specific hormones and heart function; and potential genetic causes of heart failure.

A completed CSP observational study found that smokers are five times more likely to experience an

abdominal aortic aneurysm than non-smokers after adjustment for other significant risk factors. Other results also showed an association between smoking history and coronary artery disease and hypertension.

#### OTHER CHRONIC ILLNESSES

The CSP study, Sulfasalazine Versus Placebo in Treatment of Seronegative Spondyloarthropathies, evaluated the drug sulfasalazine as treatment for three related arthritic conditions. The study found that sulfasalazine was effective in treating Reiter's Syndrome which can cause severe joint pain. It was somewhat effective in treating psoriatic arthritis which can disfigure the skin and somewhat effective in certain patients with ankylosing spondylitis which can produce fusion of the spinal vertebrae. Therefore, sulfasalazine is another treatment option for patients who do not respond to commonly used nonsteroidal anti-inflammatory drugs.

A brief, self-administered questionnaire is being used to measure health-related quality of life among patients with chronic obstructive pulmonary disease. Quality of life is an important aspect of treatment effectiveness. *Tu S-P, McDonnell MB, Spertus HA, Steele BG, Fihn SD. A*

*new self-administered questionnaire to monitor the health-related quality of life of patients with chronic obstructive pulmonary disease. Chest In Press, 1997.*

#### AIDS

Patients with HIV infections and AIDS are very likely to have a weak immune system. This permits infection by organisms that would not cause clinical problems in other patients. The most common infection is caused by an organism that inhabits the lungs of patients and causes pneumonia. If not treated, these pneumonias can be fatal. This project uses a mouse animal model that simulates the depressed immune system of AIDS patients. After infecting these mice with the organism that causes pneumonia in AIDS patients, this model is ideal for testing new drugs that might be effective in killing the infecting organism.

Assessment tool identifies AIDS patients who qualify for step-down care. Intermediate skilled nursing facilities, or "step-down" units, may provide more cost-effective care for AIDS patients who no longer require acute care hospital services.

## HIGHLIGHTS

### CHRONIC DISEASES • TRAUMA RELATED IMPAIRMENT

VA researchers developed a simple bedside index method for early identification of those patients who may benefit from step-down care.

*Bennett CL, Ullman M, Dickinson GM, et al. Patterns of care for HIV-related PCP in a university medical program: a case study. Clinical Performance and Quality Health Care 14(4): 186-89, 1996.*

Clinical staging for HIV will support decision-making. Effective clinical staging systems for HIV infection can be developed based on relatively few variables, for which the needed data are readily available in clinical practice settings, according to this study. These results will facilitate the development of clinical staging systems that can be used to guide clinical decision-making and help clinicians advise patients on their futures. *Rabeneck L, Hartigan PM, Huang IW, et al. An evaluation of two approaches. Journal of General Internal Medicine 11: 622-4, 1996.*

The recently completed CSP study, Clinical Significance of Surrogate Marker Changes for HIV Infection, showed which blood tests best determine if treatment for AIDS is effective. The results are important for testing new drugs to treat HIV.

#### DIABETES

The Implantable Insulin Pump Study is a randomized trial that found that the insulin pump is a better treatment for persons with adult-onset diabetes than are multiple daily injections of insulin. The insulin pump was better at reducing the daily variation in a person's blood sugar, eliminating weight gain from insulin treatment, reducing the frequency of low blood sugar reactions, and improving patients' self-reported quality of life.

#### INFECTIOUS DISEASES

A completed CSP prospective study, Evaluations of Corticosteroids for Treatment of Severe Sepsis, followed patients for eight years and showed that even when patients recover from infection, they continue to die at a rate higher than expected and the likelihood of dying is related to how serious the infection was. Treatments aimed at limiting damage to vital organs in patients with serious infections may save lives by preventing long-term sequelae of the infection and thus reduce health care costs.

A planned CSP study, Trial of Varicella Vaccine for the Prevention of Herpes Zoster and its Complications, will examine whether immunization with live attenuated varicella vaccine can reduce the incidence and severity of herpes zoster and its complications in elderly patients.

#### TRAUMA RELATED IMPAIRMENT

##### AMPUTATION

A series of HSR&D studies among diabetic veterans with foot ulcers found footwear as the most frequent initiating cause of an event leading to amputation. These findings have been incorporated into a number of research and educational initiatives, including the VA Diabetes Guideline Project and the "Feet Can Last a Lifetime" campaign by the National Institutes of Health.

Rehabilitation researchers have incorporated these findings into a computer-aided design and manufacture system for footwear. The resulting process has been successful in reducing the number of incidents leading to foot ulcers. A second generation of customized footwear is able to provide the same protection with more normative shoe styles.

##### PROSTHETICS

An extended physiological proprioception controller designed to be used as a position controller in the operation of electric-powered upper limb prostheses was developed and clinically tested. The possibility of independent, but coordinated control of two electric powered components in upper extremity prostheses was demonstrated.



## HIGHLIGHTS

### TRAUMA RELATED IMPAIRMENT • HEALTH SYSTEMS

VA technology in computer-aided design and manufacture for prosthetics was put in use by the Prosthetic Research Foundation, a non-profit group, to bring “American Limbs” to Vietnam and other war-torn countries. Wijeyuptha Ellepola, RR&D Prosthetics Program Analyst, has been asked by this Foundation to study the feasibility of establishing a similar program in his native country of Sri Lanka.

#### SPINAL CORD INJURY

Functional Electrical Stimulation (FES) is a technology that allows individuals with spinal cord injury to exercise paralyzed muscles, control bladder and bowel function, and alleviate tissue breakdown. Researchers are studying use of FES in helping individuals regain such functions as grasping or even walking. The first dual FES hand grasping system was implanted in a patient allowing for increased function over previous implants in one hand.

The recent development of the Spinal Cord Dysfunction (SCD) National Registry will provide clinicians a demographic profile of veteran patients with spinal cord dysfunction. The profile provides a comprehensive view of patient health and functional status and

health care utilization for a range of services, such as pharmacy, laboratory, and radiology. Because the SCD National Registry consolidates local data into a national database, it has broad applications. For example, doctors and other providers can use the information to identify and study certain populations; to evaluate programs within their own institution or practice; and they can use the profiles to measure how effective their program is in improving patients’ health and functional status.

A Wheelchair Aerobic Fitness Trainer (WAFT) for cardiovascular assessment and conditioning has been developed through VA RR&D. This unit employs digital echocardiography to provide a unique and clinically useful noninvasive method for the detection of coronary artery disease in persons with spinal cord injuries. The WAFT was featured in the 1996 Paralympics and Abilities Expo and received strong positive response from wheelchair athletes who suggested it also had a role as a valuable athletic training tool.

#### JOINT REPLACEMENT

Continuing investigations by rehabilitation researchers revealed an answer to the question of why many polyethylene bearings in orthopedic prostheses become fatigued and fail earlier than laboratory testing would indicate. The use of gamma radiation for sterilization of the polymer components, a common process for sterilization, resulted in initiation of a breakdown process that continues in the patient. As a result, orthopedic manufacturers have altered their modes of sterilization. In response to a related study, orthopedic manufacturers have modified their design and manufacturing processes based on findings of VA-funded analysis of old components that were removed from patients, to document joint implant performance and failure modes.

#### HEALTH SYSTEMS

Building on an HSR&D collaborative effort with VHA’s Office of Quality Management, the National VA Surgical Quality Improvement Program is a study that is examining patient-specific factors that affect post-surgical mortality and morbidity. The results will help the VA identify high quality providers and best practices to improve surgical care.



# HIGHLIGHTS

## HEALTH SYSTEMS • MENTAL ILLNESSES

An HSR&D study has demonstrated that patients should express their preferences for life-sustaining treatment in advance care directives. The study found that physicians, nurses, and spouses were unable to accurately judge what in the patient's opinion, would constitute "futile treatment." A workbook, *Your Life, Your Choices*, was developed to help patients personalize their own advance directives.

Beginning in Fall 1997, VA launched a Technology Recommendations Panel (TRP) to evaluate health care technologies and make recommendations on their use. For instance, the panel may evaluate a technology (such as a therapy, procedure, or treatment) to determine whether it is an experimental or non-experimental treatment, or whether it is clinically effective and cost-effective.

A CSP trial, A Multi-Site Randomized Trial of Team-Managed Home-Based Primary Care (HBPC), will determine the cost-effectiveness of team-managed HBPC versus customary care for patients with severe disabilities or who are terminally ill. Results should be helpful to determine the emphasis of HBPC in the future.

*Hughes S, Ulasevich A, Weaver E, Henderson W, et al. Impact of home care on hospital days: a meta-analysis. Health Services Research, 1997.*

### MENTAL ILLNESSES

#### POST-TRAUMATIC STRESS DISORDER

Post-traumatic stress disorder is a clinical problem for veterans, particularly for those who have seen combat. Why some veterans are more likely to suffer from PTSD after combat than are others is not known. Magnetic resonance imaging (MRI), has been used to measure volumes of specific brain areas of patients with combat-related PTSD, in combat-exposed patients without PTSD, and in patients without PTSD. Results indicate that the volume of a particular area of the brain associated with memory, the hippocampus, is smaller in PTSD patients than in patients without PTSD. This difference may be useful as a diagnostic indicator for those individuals for the development of PTSD upon combat exposure.

The Post-Traumatic Stress Disorder (PTSD) Treatment Outcomes Study, is one of the largest and most carefully designed studies of a psychotherapeutic treatment for PTSD. This study will test a long-held but never demonstrated hypothesis that a controlled "reliving" of trauma in a group setting reduces stress disorder disabilities, and may have important implications for treatment of this debilitating condition.

### SCHIZOPHRENIA

Investigators have discovered a gene that may carry a major part of the risk for schizophrenia, a disabling mental illness suffered by four million Americans and one of the most common causes of disabilities among VA patients. The gene codes a brain receptor for nicotine, perhaps explaining why schizophrenics as a group are very heavy smokers. Researchers studied a defect associated with schizophrenia—the inability to screen out irrelevant stimuli such as background sights and sounds—by tracing the inheritance of the problem in nine families with multiple cases of the disability. They found the defect was linked to the nicotine receptor gene, suggesting that drug or gene therapy that targets the receptor may improve symptoms for schizophrenics. *Freedman R, Coon H, Myles-Worsley M, et al. Linkage of a neurophysiological deficit in schizophrenia to a chromosome 15 locus. Proceedings of the National Academy of Sciences 94: 587-92, 1997.*

## HIGHLIGHTS

### MENTAL ILLNESSES • SUBSTANCE ABUSE • SENSORY LOSS

A completed CSP study, the Clinical and Economic Impact of Clozapine Treatment on Refractory Schizophrenia, showed the new drug clozapine to be more effective than haloperidol in treating schizophrenia. While much more costly than haloperidol, clozapine led to fewer hospital days—offsetting its higher costs—and thus may be a more cost-effective long-term treatment.

*Rosenheck R, Cramer J, Xu W, et al. A comparison of clozapine and haloperidol in hospitalized patients with refractory schizophrenia.*

*Department of Veterans Affairs Cooperative Study Group on Clozapine in Refractory Schizophrenia. New England Journal of Medicine 337: 809-815, 1997.*

A recent CSP study, Vitamin E Treatment of Tardive Dyskinesia, will determine the usefulness of vitamin E in treating the side effect “tardive dyskinesia,” disfiguring facial movements caused by the use of anti-psychotic medications.

Since 1988, three VA medical centers—in West Haven, Connecticut; Denver, Colorado; and Brockton, Massachusetts,—have been studying the causes of and new ways to treat schizophrenia.

A rehabilitation study demonstrated that schizophrenic patients participating in a work-for-pay-program designed as a therapeutic tool showed increased self-esteem, had less frequent hospitalizations and longer periods of productive activity between hospitalizations. Results of this study will be applied to guidelines for planning programs in the rehabilitation of schizophrenic veterans.

### SUBSTANCE ABUSE

A CSP study, Buprenorphine/Naloxone for Treatment of Opiate Dependence, will determine the efficacy and safety of the combination drug Buprenorphine/Naloxone for use in treating individuals addicted to opiates. The data from this study will be used to support a New Drug Application to the Food and Drug Administration for the combination product.

Four alcohol research centers comprise the VA’s Alcohol Research Center Program, which was established in 1989. The centers are based in West Haven, Connecticut; Omaha, Nebraska; and Denver, Colorado. The VA-Yale Alcoholism Research Center focuses on the molecular mechanisms underlying alcoholism and the development of new drugs to treat veterans with the

disease. At the Omaha Research Center for Basic and Clinical Studies of Alcoholism 13 VA investigators and 11 investigators from the University of Nebraska Medical Center and Creighton University are studying how to prevent liver disease and other immune system disorders associated with alcoholism. At the Denver center, eight investigators are studying genes responsible for alcoholism and alcoholic liver disease. Current studies are aimed at liver disease among alcoholic women.

A CSP study, Colchicine in the Treatment of Alcoholic Cirrhosis of the Liver, is designed to assess whether colchicine prolongs life in alcoholic cirrhosis patients and reduces disease-associated illnesses and improves liver functioning.

### SENSORY LOSS

#### Low Vision

Collaborations have led to the development of numerous assistive technologies, including the Low Vision Enhancement System (LVES), a portable headset with miniaturized optics, video camera, and electronic technology that enhances image resolution for low vision users. The Baltimore VAMC, Johns Hopkins University, NASA, and Polaroid Corporation developed

## HIGHLIGHTS

### SENSORY LOSS • PERSIAN GULF

this first-ever low vision assistive product to allow users to simultaneously move freely about and control their visual focus and magnification.

The Kansas City Rehabilitation R&D Team developed the use of the scanning laser ophthalmoscope in Low-Vision Rehabilitation. For this work, they received the Olin E. Teague Award given to the individual or clinical team in VA who has had the most impact on the rehabilitation of veterans.

Initial clinical trials of Liquid Crystal Dark-Adapting Eyeglasses show promise of improved acuity, contrast sensitivity and assurance in traveling for persons with low vision. Information from these trials has been applied to developing prototypes for commercial use.

#### AUDIOLOGY

Rehabilitation researchers began a study designed to predict the success or failure of prosthetic ossicular reconstruction for patients with hearing loss due to dysfunction of the middle ear. The research will utilize knowledge of the pre-operative status of the patient and the function of the eustachian tube.

Direct and indirect operative and assessment techniques will be involved.

A national research center in Rehabilitative Auditory Research has been established at Portland VAMC. The Center's primary objective is the alleviation of communicative, social, and economic problems for veterans resulting from auditory system impairment, sensorineural hearing loss and tinnitus.

#### PERSIAN GULF

Beginning in 1994, three VA medical centers—Boston VAMC, East Orange VAMC, and Portland VAMC—were selected to study the effect of environmental hazards on the health of Persian Gulf veterans. The centers focus on a wide range of neuropsychological, immunological, pulmonary, neurological and psychological health concerns of Persian Gulf veterans and have been established as part of a long-term commitment to support environmental and occupational health research. In FY 1997, the Louisville VAMC was selected as the fourth Environmental Hazards Research Center. The Office of Research and

Development also funds the population-based VA National Survey of Persian Gulf Veterans. Phase I, a mail survey of 30,000 deployed and non-deployed veterans, has been completed; Phase II, a telephone follow-up and medical records review of a subset of the 30,000 is nearing completion; and Phase III, which involves physical examinations of approximately 5,000 veterans from Phases I and II and their family members, will commence in Spring 1998 under the auspices of the Hines VA Cooperative Studies Coordinating Center.

# SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

*The summary of 1997 Research and Development Projects is organized by research service, (Cooperative Studies, Health Services Research and Development, Medical Research, and Rehabilitation Research and Development), and then alphabetically by investigator. The listing of projects for Medical Research, the largest service within the Office of Research and Development, reflects only those projects funded in the Fall 1996 merit review round.*

## COOPERATIVE STUDIES

Vitamin E Treatment of Tardive Dyskinesia

Adler, Lenard, M.D.,  
Rotrosen, John, M.D.  
\$293,857

Reducing the Efficacy-Effectiveness Gap in Bipolar Disorder  
Bauer, Mark S., M.D.  
\$79,595

Multi-Site Study of Computer Generated Reminders to Enhance Adherence to Standards of Ambulatory Care  
Beauchamp, Charles, M.D.,  
Demakis, John G., M.D.  
\$149,529

VA Non-Q-Wave Infarction Strategies In-Hospital (VANQWISH)  
Boden, William E., M.D.  
\$351,342

The Clinical and Economic Impact of Clozapine Treatment on Refractory Schizophrenia  
Charney, Dennis S., M.D.,  
Rosenheck, Robert, M.D.  
\$73,420

Evaluation of GEM Units and Geriatric Follow-up  
Cohen, Harvey J. M.D.,  
Feussner, John, M.D.  
\$1,003,181

Beta-Blocker Evaluation of Survival Trial (BEST)  
Eichhorn, Eric J., M.D.,  
Domanski, Michael, M.D.  
\$847,062

Systemic Corticosteroids in COPD Exacerbations (SCCOPE)  
Erbland, Marcia L., M.D.,  
Niewoehner, Dennis, M.D.  
\$418,794

Utilizing Computer Networks in the Study of Disease: Refractory Immune Thrombocytopenia Trial  
Fiore, Louis, M.D.  
\$78,200

Warfarin and Aspirin in Secondary Prevention  
Fiore, Louis, M.D.,  
Ezekowitz, Michael, M.D., Ph.D.  
\$1,872,496

Group Treatment of PTSD for Vietnam Theater Veterans (TOP)  
Friedman, Matthew J., M.D., Ph.D.,  
Schnurr, Paula, Ph.D.  
\$882,973

Registry to Obtain Long Term Patency Data on Saphenous Vein and Internal Mammary Artery Grafts  
Goldman, Steven, M.D.  
\$181,167

Processes, Structures, and Outcomes of Care in Cardiac Surgery  
Hammermeister, K.E., M.D.,  
Glover, Frederick, M.D.  
\$1,076,025

Oral Anticoagulant Therapy to Improve Patency of Small Caliber Prosthetic Bypass Grafts  
Johnson, Willard, M.D.  
\$949,688

A Comparison of Subcutaneous and Intravenous Administration of Recombinant Human Erythropoietin in Dialysis Patients  
Kaufman, James S., M.D.  
\$54,455

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Antithrombotic Agents in the Prevention of Hemodialysis Access Thrombosis Kaufman, James, M.D. \$3,558	Colchicine in the Treatment of Alcoholic Cirrhosis of the Liver Morgan, Timothy R., M.D. \$1,139,608	A Genetic Linkage Study of Schizophrenia Tsuang, Ming, M.D., Ph.D. \$491,620
Naltrexone in the Treatment of Alcoholism Krystal, John, M.D., Rosenheck, Robert, M.D. \$889,848	Urgent Revascularization in Unstable Angina (AWESOME) Morrison, Douglass, M.D., Gulshan, Sethi, M.D. \$859,290	A Multi-Site Randomized Trial of Team Managed Hospital Based Home Care Weaver, Frances, Ph.D., Cummings, Joan, M.D., Hughes, Susan, D.S.W. \$1,415,340
Natural History of Large Abdominal Aortic Aneurysms Lederle, Frank A., M.D. \$52,695	Treatment of Seizures in the Elderly Population Rowan, A. James, M.D., Ramsay, R. Eugene, M.D. \$221,970	Costs and Outcomes of Telephone Care Pilot Welch, H. Gilbert, M.D., M.P.H. \$217,688
Aneurysm Detection and Management (ADAM) Lederle, Frank A., M.D., Wilson, Samuel E., M.D. \$1,460,408	The VA HDL Intervention Trial (HIT): Secondary Prevention of Coronary Heart Disease in Men with Low HDL-Cholesterol and Desirable LDL-Cholesterol Rubins, Hanna, M.D., M.P.H., Robins, Sander, M.D. \$1,225,763	Normative Evaluation of a Computer-Assisted Neuropsychological Screening Battery Pilot White, Roberta, Ph.D. \$51,147
Effect of Polyunsaturated Lecithin on Liver Fibrosis Lieber, Charles W., M.D. \$1,495,014	The Effects of Antiarrhythmic Therapy in Maintaining Stability of Sinus Rhythm in Atrial Fibrillation Singh, Steven N., M.D., Singh, Bramah N., M.D., Ph.D. \$213,985	Prostate Cancer Intervention Versus Observation Trial (PIVOT): A Randomized Trial Comparing Radical Prostatectomy versus Palliative Expectant Management for the Treatment of Clinically Localized Prostate Cancer Wilt, Timothy J., M.D., M.P.H., Brawer, Michael, M.D. \$805,703
Prospective Evaluation of Risk Factors for Large (> 1 cm) Colonic Adenomas in Asymptomatic Subjects Lieberman, David, M.D. \$684,055	Comparison of Anterior and Posterior Chamber Lens Implants After Vitreous Loss in Attempted Extracapsular Cataract Extraction Smith, Thomas, M.D. \$479,778	The Iron (Fe) and Atherosclerosis Study (FeAST) - Pilot Zacharski, Leo R., M.D. \$23,800
The Coronary Artery Revascularization Prophylaxis Trial (CARP Trial) McFalls, Edward O., M.D., Ph.D. \$120,188		

# SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

## HEALTH SERVICES RESEARCH AND DEVELOPMENT SERVICE

Practice Patterns and Variations in  
Care of VA Patients with Acute MI  
AMI Center, West Roxbury  
\$238,100

Preventing Progression to Chronic  
Back Pain  
Atkinson, Joseph, M.D.  
\$157,300

Rehabilitation Issues of Concern for  
Women with Spinal Cord Injuries  
Bach, Carol Ann, Ph.D.  
\$23,625

HSR&D Developmental Project at  
Providence, Rhode Island  
Bauer, Mark, M.D.  
\$50,000

Quality of Life and Patient Utility  
for Veterans with Prostate Cancer  
Bennett, Charles, M.D., Ph.D.  
\$197,952

Pressure Ulcer Incidence Rates as a  
Quality Measure for Long-Term  
Care  
Berlowitz, Dan, M.D.  
\$93,050

Quality Assessment in Ambulatory  
Care: A Pilot Study  
Berlowitz, Dan, M.D.  
\$37,890

Impact of Provider Substance Abuse  
Education Guideline  
Implementation  
Berlowitz, Dan, M.D.  
\$41,735

HSR&D Developmental Project at  
Baltimore, Maryland  
Bradham, Douglas, M.D., Ph.D.  
\$49,834

Social Factors and Cardiac  
Outcomes: A Prospective Study  
Camberg, Lois, Ph.D.  
\$112,980

Cognitive-Behavioral Pain  
Management and Health Outcome  
Carmody, Timothy, Ph.D.  
\$20,783

Psychophysiology of PTSD in  
Female Nurse Vietnam Veterans  
Carson, Margaret, R.N., Ph.D.  
\$205,750

Reducing Lower Back Injuries in  
VAMC Nursing Personnel  
Caska, Barbara, Ph.D.  
\$113,050

Implementation and Impact of  
Quality Improvement (QI) Practice  
in VHA Hospitals  
Charns, Martin, D.B.A.  
\$214,794

Reliability and Validity of a Health  
Status Measure for Skin Disease  
Chren, Mary, M.D.  
\$23,812

Effectiveness of Screening for  
Prostatic Cancer: A Cohort Study  
Concato, John, M.D.  
\$150,700

Risk of Mortality in Prostate Cancer  
Concato, John, M.D.  
\$37,968

Educational Efforts to Reduce the  
Cultural and Ethnic Variation in  
Cardiac Procedure Use  
Conigliaro, Joseph, M.D., M.P.H.  
\$15,375

Relationship of Race to  
Cardiovascular Procedure Use at  
VAMCs  
Conigliaro, Joseph, M.D., M.P.H.  
\$81,567

Migration Patterns of U.S. Veterans  
Cowper, Diane, M.A.  
\$51,000

Familial Patterns in Prostate Cancer  
Cunningham, Glenn, M.D.  
\$134,375

Reproductive Health in Women  
Veterans Related to Military  
Experience and PTSD  
DeJJunco, Deborah, Ph.D.  
\$62,000

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

SAFE-GRIP Fall/Injuries  
Interventions: A Randomized Trial  
Devito, Carolee, Ph.D., M.P.H.  
\$186,700

Nurse Counseling for Physical  
Activity in Primary Care Patients  
Dubbert, Patricia, Ph.D.  
\$97,125

HSR&D Developmental Project at  
Omaha, Nebraska  
Duckworth, William, M.D.  
\$50,342

A Follow-up Investigation  
of the Effectiveness and Efficiency of  
GEM Care  
Engelhardt, Joseph, Ph.D.  
\$59,500

HSR&D Developmental Project at  
Decatur, Georgia  
Etchason, Jeff, M.D.  
\$32,900

Evaluation of Subacute  
Rehabilitation Care  
Evans, Ron, M.S.W.  
\$69,225

Ambulatory Care Quality  
Improvement Project: ACQUIP  
Fihn, Stephan, M.D., M.P.H.  
\$815,949

Schizophrenia Outcomes Module:  
Enhancement and Field Testing  
Fisher, Ellen, Ph.D.  
\$229,928

A Pilot Study: Effectiveness  
of Telecare in the Management  
of Diabetes  
Gaehde, Stephen, M.D.,  
Berlowitz, Dan, M.D.  
\$108,150

Gait and Balance Training in  
Reducing Occurrence and Fear of  
Falls in the Elderly  
Galindo-Ciocon, Daisy, Ph.D.  
\$44,700

Dental Longitudinal Study  
Garcia, Raul, D.M.D.  
\$200,000

Assessment of Respiratory Function  
in Chronic Spinal Cord Injury  
Garshick, Eric, M.D.  
\$87,263

Utility of PTF Data in Monitoring  
Outcomes of Surgical Care  
Geraci, Jane, M.D.  
\$88,214

The Association of Hospital  
Complications and Process of Care  
Geraci, Jane, M.D.  
\$34,511

Improved Management of Patients  
with Chronic Airflow Obstruction  
Goldman, Michael, M.D.  
\$37,900

Costs, Quality of Life and  
Functional Outcomes in  
Veterans Treated for MS with  
Beta-Interferon 1-B  
Guarnaccia, Joseph, Ph.D.  
\$117,450

Cocaine Abuse:  
A Cognitive-Behavioral Intervention  
Hall, Sharon, Ph.D.  
\$28,300

Ethnicity and Veteran Identity  
as Determinants of VA  
Ambulatory Care Use  
Harada, Nancy, Ph.D.  
\$98,733

Effectiveness of Team Treatment of  
Depression in Primary Care  
Hedrick, Susan, Ph.D.  
\$56,548

Evaluating Quality of Care Screens  
from Laboratory Databases  
Hofer, Timothy, M.D.  
\$232,700

HSR&D Developmental Project at  
Lexington, Kentucky  
Holleman, Donald, M.D.  
\$93,767

Clinical Management and Outcomes  
of Veterans with Strokes at VAMC  
Horner, Ronnie, Ph.D.  
\$347,708



## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

HSR&D Developmental Project at Charleston, South Carolina Hutchinson, Florence, M.D. \$14,335	Productivity and Labor Requirements of VAMCs Lehner, Laura, Ph.D. \$23,553	Determinants of VA and Non-VA Health Care Use among Elderly Veterans Morgan, Robert, Ph.D. \$34,300
HSR&D Developmental Project at Philadelphia, Pennsylvania Johnson, Caroline, M.D. \$18,320	Mental Health Outcomes Associated with Bosnia Peacekeeping Mission Litz, Brett, Ph.D. \$27,534	The Effects of Exercise Training in a Frail Group of Older Veterans Muelman, John, M.D. \$35,462
Oral Health and Quality of Life in Older Veterans Jones, Judith, D.D.S. \$176,800	Design and Validation of a VA Clinical Dietetic Staffing Model Lowery, Julie, Ph.D. \$33,200	HSR&D Developmental Project at Tampa, Florida Nelson, Audrey, M.D. \$61,498
Impact of Therapeutic Work on Homeless, Substance Dependent Veterans Kashner, Michael, Ph.D. \$26,913	Development of Individual-Patient Physical Health Profiles with IRT McHorney, Colleen, Ph.D. \$33,875	Race, Patient Preference and Stroke Risk Reduction Oddone, Eugene, M.D., M.H.Sc. \$98,733
HSR&D Developmental Project at Tucson, Arizona Katz, Murray, M.D. \$72,435	Practice Patterns in Care of Chronically Mentally Ill and Homeless Veterans Mental Health Care, West Haven \$308,922	Is Carotid Endarterectomy Under- Utilized in Black Patients? Oddone, Eugene, M.D., M.H.Sc. \$33,325
Cultural Factors in Adaptation to Chronic Illness Katz, Murray, M.D. \$71,700	HSR&D Developmental Project at Augusta, Georgia Middelton, Henry, M.D. \$41,830	A Multi-site Study of Strategies for Implementing Schizophrenia Guidelines Owen, Richard, M.D. \$48,284
Health Related Quality of Life in Veterans: A Pilot Study Kazis, Lewis, Sc.D. \$669,560	Utilization of Dental Resources by VA HIV/AIDS Patients Mohart, Robert, D.M.D. \$9,250	The Quality of Medication Management for Schizophrenia Owen, Richard, M.D. \$198,010

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Are Clinical Vignettes Better than Chart Abstraction to Measure Quality? Peabody, John W., M.D., Ph.D. \$135,268	HSR&D Developmental Project at Columbia, South Carolina Pillinger, Carole, M.D. \$47,890	A Casefinding and Referral System for Older Veterans within Primary Care Rubenstein, Laurence, M.D., M.P.H. \$206,200
Development and Evaluation of an Advance Care Planning Workbook Pearlman, Robert, M.D., M.P.H. \$31,468	VA and Non-VA Resource Use and Outcomes in HIV Infected Men Rabeneck, Linda, M.D. \$49,901	A Prospective Study of Patient Preferences for Prostatic Cancer Treatment Schapira, Marilyn, M.D. \$101,894
Evaluation of a Comprehensive Advance Care Planning Intervention Pearlman, Robert, M.D., M.P.H. \$78,797	Effect of Activity on Sleep of Cognitively-Impaired Veterans Richards, Kathleen, Ph.D., R.N. \$39,725	The Impact of a Specific Drug Program on Alcoholics Schukit, Marc, M.D. \$148,974
Appropriateness and Necessity of Cardiac Procedure Use after AMI in VHA Peterson, Laura, M.D., M.P.H. \$366,404	Coronary Angioplasty Outcomes—Veterans and the Private Sector Ritchie, James L., M.D. \$75,741	Quality of Life in Women Veterans Using VA Ambulatory Health Care Skinner, Catherine, Ph.D., Kazis, Lewis, Sc.D. \$211,305
Factors that Influence the Demand for Outpatient VA Services Phibbs, Ciaran, Ph.D. \$101,350	HSR&D Developmental Project at Cincinnati, Ohio Roselle, Gary, M.D. \$44,474	Objective Measurement of Daily Activity in COPD Steele, Bonnie, Ph.D. \$104,043
Automated Calls with Nurse Follow-up to Improve Diabetes Ambulatory Care Piette, John, Ph.D. \$139,771	Decline in Functional Status as a Quality Indicator for Long-Term Care Rosen, Amy, Ph.D. \$41,600	Causes of Protein-Energy Undernutrition among Elderly Patients Sullivan, Dennis, M.D. \$122,074
Predicting Inpatient Service Use among VA Substance Abuse Patients Piette, John, Ph.D. \$68,400	A Regional Market-Based Analysis of Patient Outcomes in a VA Hospital Rosenthal, Gary, M.D. \$110,200	Health Services Databases and Data Quality Information Swindle, Ralph, Ph.D. \$102,400

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

An Integrated Model of Primary  
Care in Mental Health  
Swindle, Ralph, Ph.D.  
\$35,674

Computerized Guidelines Enhanced  
by Symptoms and History: Clinical  
Effects  
Tierney, William, M.D.  
\$46,366

Defining the Attributes of the  
Quality of Dying  
Tulsky, James, M.D.  
\$7,069

HSR&D Developmental Project at  
Buffalo, New York  
Ventura, Marlene, R.N.  
\$28,995

Normative Aging Study  
Vokonas, Pantel, M.D.  
\$405,000

HSR&D Developmental Project at  
Iowa City, Iowa  
Wakefield, Bonnie, Ph.D., R.N.  
\$46,230

Development of a VA Long-Term  
Care Database  
Weaver, Frances, Ph.D.  
\$80,403

Teledermatology: Diagnosing  
Dermatologic Lesions by Digital  
Imaging  
Whited, John, M.D.  
\$35,800

Cultural Barriers to Access to VA  
Blind Rehabilitation Services  
Williams, Marjory, R.N.  
\$60,150

An Objective Indicator of Risk of  
Developing a Pressure Ulcer  
Wilson, Paulette, Ph.D.  
\$53,779

Female Veterans' Perceptions and  
Experiences in Accessing VHA Care  
Wolfe, Jessica, M.D.,  
Daley, Jennifer, M.D.  
\$136,625

Patient Preferences in End Stage  
Prostate Cancer  
Wray, Nelda, M.D., M.P.H.  
\$140,436

### MEDICAL RESEARCH SERVICE

*Medical Research Service funded  
1,221 projects in FY97, totalling  
\$98,856,745. The following listing  
represents only those projects funded in  
the Fall of 1996 Merit Review round.*

Antigenicity of Human Prostatic  
Proteins in Prostatic Cancer  
Alexander, Richard, M.D.  
\$58,750

Pathophysiology of the Kidney in  
Aging  
Anderson, Sharon, M.D.  
\$49,450

Cortical control of Dynamic  
Isometric Force  
Ashe, James, M.D.  
\$37,900

Inhibition of B Cell Apoptosis by  
CpG Oligodeoxyribonucleotides  
Ashman, Robert F., M.D.  
\$50,000

Renal Biology of the Isoprostanes  
Badr, Kamal F., M.D.  
\$50,000

Insulin Sensitivity, Vascular Tone  
and Hypertension  
Baron, Alain D., M.D.  
\$58,200

Low Renin Hypertension and All  
Nuclear Receptors  
Barrett, Jack D., Ph.D.  
\$75,400

Regulation of Intestinal Epithelial  
Phenotype by Strain: An In Vitro  
Model  
Basson, Marc D., M.D., Ph.D.  
\$61,900

Paradigms of Molecular Mimicry  
in Syphilis  
Baughn, Robert E., Ph.D.  
\$72,900

Angiotensin-Adrenergic Interactions  
in the Kidney  
Blantz, Roland C., M.D.  
\$50,000

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Cognitive and Imaging Studies of  
Older Adults with the ApoE-E4  
Allele

Bondi, Mark W., Ph.D.  
\$98,900

Adrenergic Regulation of Cardiac  
Calcium Channels

Boutjdir, Mohamed, Ph.D.  
\$104,550

Biology of Macrophage Transferrin-  
Independent Fe Uptake

Britigan, Bradley E., M.D.  
\$101,900

Prediction of Clinical  
Pharmacokinetics/Dynamics using  
Empirical Methods

Brier, Michael E., Ph.D.  
\$80,876

Mechanism of Degeneration of  
Adrenergic Neurons in Alzheimer's  
Dementia

Burke, William J., M.D., Ph.D.  
\$50,000

Alternaria Asthma: A Model of  
Airway Inflammation and  
Hyperreactivity

Bush, Robert K., M.D.  
\$87,700

Attaching-Effacing Escherischia coli  
as Vaccine Vectors

Cantey, Robert J., M.D.  
\$41,000

Calcium-mediated Signal  
Transduction in Neutrophils

Clark, Robert A., M.D.  
\$100,750

Aggregated A/Beta in Alzheimer's:  
Behavior and Neural Effects in  
Aging Rats

Cleary, James P. Ph.D.  
\$49,900

Control of Esophageal Motor  
Function; Roles of Antioxidant  
Enzymes and Superoxide

Conklin, Jeffrey L., M.D.  
\$52,500

Mechanisms of Induction of  
Mucosal Immunity; Rotavirus  
Model

Conner, Margaret E., Ph.D.  
\$67,100

Functional and Molecular  
Characterization of an 18KD  
Inhibitor Protein

Cooper, Jr., John Allen D., M.D.  
\$40,300

Age-related Mechanisms of Prostatic  
Growth

Dahiya, Rajvir, Ph.D.  
\$50,900

Molecular and Cellular  
Determinants of Immunity in  
Histoplasmosis

Deepe, George S., M.D.  
\$49,800

Regulation of Neurohormones in  
the Interstitial Fluid Space in the  
Heart

Dell'Italia, Louis J., M.D.  
\$63,600

Control of Fetal Hemoglobin  
Synthesis

DeSimone, Joseph, Ph.D.  
\$47,500

Structure, Function and Regulation  
of Renal Potassium Channels

Desir, Gary V., M.D.  
\$48,900

Mechanisms of Virus Persistence in  
Neurons

Dhib-Jalbut, Suhayl, M.D.  
\$47,050

Long-Term Effects of Psychologic  
Stress on Memory and Hippocampal  
Function

Diamond, David M., Ph.D.  
\$125,476

Structure-Function Analysis of  
Rab5, a GTPase that Regulates  
Endocytosis

Dickey, Burton F., M.D.  
\$99,250

Mechanism of Insulin Action

Draznin, Boris, M.D., Ph.D.  
\$104,000

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Regulation of Gene Expression in Brain Injury and Recovery Dwyer, Barney E., Ph.D. \$158,561	Parietal Cells, Transforming Growth Factor-alpha and Gastric Mucosal Homeostasis Goldenring, James R., M.D., Ph.D. \$95,150	Molecular Characterization of Receptor Mediated Uptake of Naked DNA Hefeneider, Steven H., Ph.D. \$124,488
Alcohol-Induced Alterations in Sex Steroid Receptor Function Eagon, Patricia K., Ph.D. \$51,050	Pathogenesis of Gastroparesis: Role of Inhibitory Nerves Goyal, Raj K., M.D. \$89,150	Insulin and IGF Regulation of p38 MAP Kinase and Neuronal Survival Heidenreich, Kim A., Ph.D. \$90,397
TGF/B Induced Mediators of the Pathogenesis of Arthritis:VPF/VEGF Fava, Roy A., Ph.D. \$173,400	Cell Specific Mitogens for Engineered Re-Endothelialization Greisler, Howard P., M.D. \$58,900	Mechanisms of Insulin Resistance in Skeletal Muscle of NIDDM Henry, Robert R., M.D. \$100,250
Electrophysiological Abnormalities in PTSD Fein, George, Ph.D., Neylan, Thomas C., M.D. \$50,000	Genetic Deletion and Recombination in Nasopharyngeal Carcinoma Gulley, Margaret L., M.D. \$35,300	Genetics and Neuroleptic Response Hitzemann, Robert J., Ph.D. \$135,093
Mechanisms Mediating Insulin's Inhibition of Pancreatic Bicarbonate Secretion Fink, Aaron S., M.D. \$59,100	Heparan Sulfate Proteoglycans in Human Hematopoiesis Gupta, Pankaj, M.D., M.B.B.S. \$29,050	Catecholamine Action in Aging Hoffman, Brian B., M.D. \$35,300
Induction of an Asthma-like Disorder in the Mouse by IL-4 and IL-5 Finkelman, Fred D., M.D. \$49,950	Mechanisms of Group A Streptococcal Adhesion and Colonization Hasty, David L., Ph.D. \$166,084	Skeletal Fixation of Porous Coated Devices Hofmann, Aaron A., M.D. \$29,350
Serial CSF Studies in Combat Veterans with PTSD Geraciotti, Thomas D., M.D. \$49,700	Chondrocyte Collagenases and Cartilage Degradation Hasty, Karen A., Ph.D. \$78,750	Pathobiochemistry of Acute Lung Injury Hoidal, John R., M.D. \$104,300
		Molecular Mapping of the Calcitonin Gene-Related Peptide (CGRP) Receptor Howard, Guy A., Ph.D. \$98,450

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Genetics of Superoxide Production by <i>Enterococcus faecalis</i> Huycke, Mark M., M.D. \$47,800	Characterization of a Cloned Receptor for Human CMV gH Keay, Susan K., M.D., Ph.D. \$45,450	Diaphragmatic Adaptation Elicited by COPD in Man Levine, Sanford, M.D. \$55,050
Paracrine and Autocrine Control of Bone Cell Development by Interleukin-11 Jilka, Robert L., Ph.D. \$139,389	Skeletal Muscle Glucose Transport and Phosphorylation in NIDDM Kelley, David E., M.D. \$74,050	GMF as a Signaling Molecule Lim, Ramon, M.D., Ph.D. \$71,000
Acute Pancreatitis Pathogenesis: Studies in Surgical Models Joehl, Raymond J., M.D. \$55,950	Colonic Sialyltransferase Expression Lance, M. Peter, M.D. \$49,950	Hepatitis B virus (HBV) Mutations and Seronegative HBV Infections Lok, Anna S., M.D. \$64,150
The Fetal Acetylcholine Receptor and Myasthenia Gravis Kaminski, Henry J., M.D. \$60,350	The Role of cAMP and Phosphatase Cascade in LTP Landau, Emmanuel M., M.D., Ph.D. \$50,200	Metabolic Regulation of Insulin-Like Growth Facator I Gene Expression Lowe, William L., M.D. \$73,800
Singlet-Oxygen Production from Cell-Membrane-Bound Photosensitizers Kanofsky, Jeffrey R., M.D., Ph.D. \$95,400	The Role of the HOXC4 Homeobox Gene in Leukemia and Prostate Cancer. Lawrence, H. Jeffrey, M.D. \$97,950	The Aging Gut: Regulation of Cell Proliferation Majumdar, Adhip N., Ph.D., D.Sc. \$51,150
The Effects of Exercise Training on Mental Stress-Induced Silent Ischemia Katzel, Leslie I., M.D., Ph.D. \$52,400	Analysis of PTH and Dopamine Receptor Signalling in Proximal Tubules Lederer, Eleanor, M.D. \$49,850	Mechanisms of Chemoprevention of Mammary Carcinogenesis Malejka-Giganti, D., Ph.D. \$50,000
Molecular Changes in Brain Band 3 in Alzheimer's Disease Kay, Marguerite, M.D. \$149,350	Signals that Regulate BCR/ABL Leibowitz, David, M.D. \$62,250	Regulation of the Glial Responses to Neuronal Injury Mantyh, Patrick W., Ph.D. \$77,350
	Nicotinic Receptor Expression and Mutation in Schizophrenia Leonard, Sherry, Ph.D. \$125,988	Vascular Smooth Muscle Immortalization and Cell Cycle Control March, Keith L., M.D., Ph.D. \$54,750



## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Predicting the Optimal  
Pharmacotherapy for Outpatients  
with Schizophrenia  
Marder, Stephen R., M.D.  
\$53,200

SP-A Structure/Function  
Relationships in Transgenic Mice  
McCormack, Francis X., M.D.  
\$55,800

Contractile Regulation of  
Cardiocyte Protein Synthesis  
McDermott, Paul J., Ph.D.  
\$119,598

Altered Biliary Cl- Channel  
Regulation as a Mechanism of  
Cholestasis  
McGill, James M., M.D.  
\$42,950

Novel Approaches to Chemotherapy  
of Cryptosporidiosis  
Mead, Jan R., Ph.D.  
\$61,550

PL6 Expression and Growth  
Control in Melanocytic Nevi  
Meyer, Laurence J., M.D., Ph.D.  
\$40,000

Regulation of Immune Responses  
by Regulators of Complement  
Activation  
Molina-Vicenty, Hector D., M.D.  
\$38,750

Regulation of T-Cell Activation and  
Cytokines in Autoimmune  
Thyroiditis  
Mullen, Helen B., Ph.D.  
\$71,150

Mechanism of Cytokine Action on  
Bone Cells  
Nanes, Mark S., M.D., Ph.D.  
\$83,900

Neutrophil Myeloperoxidase:  
Structure, Function and  
Biosynthesis  
Nauseef, William M., M.D.  
\$87,300

Preclinical Studies of the Blood-  
Brain Barrier and its Manipulation  
Neuwelt, Edward A., M.D.  
\$49,600

Peptide Receptors and the Digestive  
System  
Nguyen, Toan D., M.D.  
\$57,500

Structure and Function of  
Parathyroid Hormone Receptors  
Nissenson, Robert A., Ph.D.  
\$122,550

Mechanism for Altered Platelet-  
Mediated Vasodilation in Diabetes  
Mellitus  
Oskarsson, Helgi J., M.D.  
\$60,300

Coordinate Regulation of  
Cholesterol/Bile Acid Metabolism  
Pandak, William M., M.D.  
\$56,600

Functional Significance of Multiple  
Phosphorylation Sites on Rhodopsin  
Peachey, Neal S., Ph.D.  
\$82,950

PET Study of Cerebral Blood Flow  
During Traumatic Mental Imagery  
in PTSD  
Pitman, Roger K., M.D.  
\$108,800

Non-Insulin Dependent Diabetes;  
Etiology and Pathophysiology  
Porte, Jr., Daniel, M.D.  
\$99,000

Diabetes-Associated Insulin  
Secretory Defects  
Powers, Alvin C., M.D.  
\$57,400

Prognostic Factors in Renal Cell  
Carcinoma  
Presti, Jr., Joseph C., M.D.  
\$45,550

Interleukin-15: A Novel Anabolic  
Cytokine for Skeletal Muscle  
Quinn, Le Bris S., Ph.D.  
\$34,150

Alzheimer's Disease and Aging:  
Psychoneuroendocrinology  
Raskind, Murray, M.D.  
\$123,750

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Development of Viscoelastic Probes  
for Understanding the Mechanism  
of Presbyopia  
Ravi, V. Nathan, M.D., Ph.D.  
\$44,100

Cholecystokinin Mechanisms in  
Control of Digestive Functions  
Reidelberger, Roger D., Ph.D.  
\$119,211

Effects of Lung Volume Reduction  
Surgery in the Treatment of Severe  
Emphysema  
Reinoso, Mauricio A., M.D.,  
Jones, James W., M.D., Ph.D.  
\$36,550

LFA-1 Overexpression, T Cell  
Autoreactivity and Lupus  
Richardson, Bruce C., M.D., Ph.D.  
\$66,250

The Effect of Priming Combat  
Memories on Marital  
Communication  
Riggs, David S., Ph.D.  
\$38,400

Role of CD8 T Lymphocytes in  
Chronic Retrovirus Infection  
Robbins, Deanna Sydney, Ph.D.  
\$101,306

Detection of Drug Resistant Cells in  
Acute Leukemia  
Ross, Douglas D., M.D., Ph.D.  
\$56,150

Myocardial Ischemia and  
Inflammation  
Rossen, Roger D., M.D.  
\$58,050

The Molecular Mechanism of Folate  
Transport in Vascular Smooth  
Muscle  
Rubin, Stanley A., M.D.  
\$43,050

Basic Mechanisms in Hearing Loss  
of Cochlear Origin  
Ryan, Allen F., Ph.D.  
\$68,650

Dynamic Mechanisms Initiating  
Temporal Lobe Seizures  
Sackellares, James C., M.D.  
\$37,350

Leptin; Regulation by Sympathetic  
Activity and Role in Energy  
Expenditure  
Scarpace, Philip J., Ph.D.  
\$49,500

Control Factors in B Lymphocyte  
Growth Regulation  
Schubach, William H., Ph.D., M.D.  
\$96,750

Computer-Assisted Infusion of  
Drugs  
Shafer, Steven L., M.D.  
\$86,350

Sphingolipids and the Cellular Stress  
Response  
Shayman, James A., M.D.  
\$26,500

Cholinergic and Monoaminergic  
Influences on Sleep  
Shiromani, Priyattam J., Ph.D.  
\$157,410

Noradrenergic Modulation of Sleep-  
Related Seizures  
Shouse, Margaret N., Ph.D.  
\$43,900

Neurochemical Prerequisites of  
Sensitivity and Tolerance to Ethanol  
Smith, Thomas L., Ph.D.  
\$25,150

Cardiovascular Surgery: Effects of  
Heparin on Vascular Cells  
Sobel, Michael, M.D.  
\$110,400

Calcium-Activated Potassium  
Channels in Blood Cell Activation  
Sullivan, Jr., Fred Richard, M.D.  
\$85,900

Regulation and Function of the  
Alveolar Type 1 Cell Gene T1alpha/  
OTS8  
Thet, Lyn Aung, M.D.  
\$57,550

Neurobiological Properties of the  
HIV-1 nef and tat Genes  
Thomas, Florian P., M.D., Ph.D.  
\$81,700

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Molecular and Genetic Basis for  
Viral Injury to Target Cells and  
Host Tissues  
Tyler, Kenneth L., M.D.  
\$68,800

Pro Atrial Natriuretic Peptides:  
Physiologic and Therapeutic Effects  
Vesely, David L., M.D., Ph.D.  
\$47,450

Alloreactivity to Donor Endothelial  
Cells in Transplant Chronic  
Rejection  
Wagner, Cynthia R., Ph.D.  
\$140,079

Alcohol Neurotoxicity; Role of  
Neurotrophic Factors  
Walker, Don W., Ph.D.  
\$123,050

In Vivo Pharmacology of Delta  
Opioid Receptors  
Weinger, Matthew B., M.D.  
\$31,589

Transforming Growth Factor Beta  
in Chlamydia Trachomatis Infection  
Williams, Dwight M., M.D.  
\$43,950

Osteoblast Derived Phosphaturic  
Factor in Hyp Mice  
Yanagawa, Norimoto, M.D.  
\$46,300

Mechanisms of Mucociliary  
Transport  
Yeates, Donovan B., Ph.D.  
\$53,100

Molecular Mechanisms of  
Hepatocarcinogenesis  
Yeldandi, Anjana V., M.D.  
\$113,750

Therapy to Enhance Anti-Cancer  
Immune Reactivity  
Young, M. Rita, Ph.D.  
\$93,700

Stiffness in Hypertrophy-Role of the  
Cardiac Cytoskeleton  
Zile, Michael R., M.D.  
\$101,150

Neurologic Studies of Medial  
Temporal Lobe Function  
Zola, Stuart M., Ph.D.  
\$51,150

Cancer Metastasis and Angiogenesis:  
Mechanism of Activation of  
Progelatinase A  
Zucker, Stanley, M.D.  
\$72,500

### REHABILITATION RESEARCH AND DEVELOPMENT SERVICE

Factors Contributing to Older Adult  
Disability in Rising from a Bed and  
From the Floor  
Alexander, Neil, M.D.  
\$124,046

Effect of Surgical Procedures on the  
Stability of the Lumbar Motion  
Segment  
Andersson, Gunnar, M.D.  
\$108,011

Orthotics Design with Advanced  
Materials and Methods  
Armesto, David, M.D.  
\$50,000

Factors Affecting Time Between  
CVA Onset and Rehabilitation in  
the VA  
Bates, Barbara, M.D.  
\$34,700

Skeletal Changes After Spinal Cord  
Injury and Cast Immobilization  
Beaupre, Gary S., Ph.D.  
\$136,300

Effects of Work Activity and  
Cognitive Rehabilitation on  
Schizophrenia: A Matching Study  
Bell, Morris, Ph.D.  
\$212,000

Rehabilitation Effects of Pay,  
Activity and Support on  
Schizophrenia  
Bell, Morris, Ph.D.  
\$183,700

Development of a Data Base of  
Cane Techniques  
Blasch, Bruce, Ph.D.  
\$96,300

The Effect of Hydrostatic Pressure  
on Intervertebral Disc Metabolism  
Boden, Scott, M.D.  
\$179,300

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Synergy of Osteoinductive Protein  
and Electric Stimuli for Spinal  
Fusion

Boden, Scott, M.D.

\$146,500

Neuroprosthetic Control of Bladder  
and Bowel in Spinal Cord Injury  
Patients

Bodner, Donald R., M.D.

\$193,700

Minimizing Falls in the Elderly

Boninger, Michael L., M.D.

\$87,800

Quantification of Prosthetic  
Treatment Outcomes

Boone, David, C.P.

\$219,255

Investigation of Dynamic Prosthetic  
Function: Flexibility

Boone, David, C.P.

\$221,058

Development and Pilot Testing of  
Plantar Ulcer Healing Boot

Boone, David, C.P.

\$49,826

Exercise Program Designs for Older  
Adults

Boyette, Lisa W., M.Ed.

\$103,175

A Prospective Study of Plantar Foot  
Pressure and Diabetic Foot Ulcer  
Risk

Boyko, Edward, M.D.

\$189,200

Long Term Strength Training and  
Functional Status in Older Adults

Brandon, L. Jerome, Ph.D.

\$168,150

Obstacle Avoidance Training with  
Computer Simulated Environments

Brown, David, Ph.D.

\$50,000

Graded Weight-Bearing Exercise for  
Improving Ambulation after Stroke

Brown, David, Ph.D.

\$101,700

Mechanically Assisted Upper Limb  
Movement for Assessment and  
Therapy

Burgar, Charles G., M.D.

\$98,400

Differential Pressure Walking  
Assistance

Burgar, Charles, M.D.

\$69,400

Limb Manipulation Under Patient  
Control: A Pilot Study

Burgar, Charles, M.D.

\$49,700

Feasibility of Priming to Predict  
Cuing-Responsiveness in Aphasia  
Therapy

Bushell, Camille, Ph.D.

\$19,100

Pilot Study to Model Tendon  
Development, Adaptation, and  
Regeneration

Carter, Dennis, Ph.D.

\$39,200

Stimulation of Bone Healing Using  
Bone-Matrix Related Biomaterials

Chakkalakal, Dennis, M.D.

\$119,200

Generalized EPP Position  
Controller for Electric-Powered  
Upper-Limb Prostheses

Childress, Dudley, Ph.D.

\$160,000

Finite Element and Gait Analysis:  
Tools for Prosthesis Design

Childress, Dudley, Ph.D.

\$194,000

Technology Transfer of a Computer  
Aided Socket Fabrication Technique

Childress, Dudley, Ph.D.

\$181,958

Out of Laboratory Feedback-  
Controlled FNS for Locomotion

Chizeck, Howard J., D.Sc.

\$407,600

Age Variance in Nystagmus  
Suppression: A Pilot Study

Cobb, Frederick, Ph.D.

\$27,800

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

The Examination of Explanted,  
Uncemented Orthopaedic  
Prostheses  
Collier, John P., D.E.  
\$142,436

Quantitative Posturography: Age-  
Related Changes in Postural  
Stability  
Collins, James, Ph.D.  
\$155,522

Characterizing Postural Stability in  
Relation to Age and Susceptibility to  
Falling  
Collins, James, Ph.D.  
\$165,067

Behavioral and Functional Problems  
in Dementia Patients with Sensory  
Loss  
Connell, Bettye Rose, Ph.D.  
\$178,584

Manual Wheelchair User Upper  
Extremity Pain  
Cooper, Rory A., Ph.D.  
\$207,200

Design and Selection Guidelines for  
Wheelchair Ride Comfort  
Cooper, Rory A., Ph.D.  
\$175,600

Measurement and Prediction of  
Benefit from Amplification  
Cox, Robyn, M., Ph.D.  
\$179,200

Restoration of Forearm and Elbow  
Functions by FNS  
Crago, Patrick E., Ph.D.  
\$244,800

Recurrence of Bacteriuria and  
Progress to Symptomatic UTI in  
SCI Patients  
Darouiche, Rabih O., M.D.  
\$113,900

UTI Prophylaxis Using Bacterial  
Interference Following SCI  
Darouiche, Rabih, M.D.  
\$116,709

Musculoskeletal Complications of  
Spinal Cord Injury  
Deftos, Leonard, J., M.D.  
\$106,100

Computerized Adaptive Methods  
for Selecting Hearing Aids  
Dirks, Donald, Ph.D.  
\$142,181

Gait Mechanics of the Partial Foot  
Amputee  
Dorostkar, Mohammad G., M.D.  
\$253,319

Quantifying Spoken Language  
Handicap in Aphasia  
Doyle, Patrick, Ph.D.  
\$129,200

Post-Stroke Rehabilitation Pilot  
Study  
Duncan, Pamela, Ph.D.  
\$49,600

Characterizing Measures of Stroke  
Rehabilitation Outcomes  
Duncan, Pamela, W., Ph.D.  
\$219,300

Effects of Aging on Motor Unit  
Firing Behavior  
Erim, Zeynep, Ph.D.  
\$160,094

Biochemical Analysis of Synovial  
Activation in Joint Dysfunction  
Evans, Christopher H., Ph.D.  
\$109,800

Development of an Automated  
Technique for the Clinical  
Evaluation of Tinnitus  
Fausti, Stephen A., Ph.D.  
\$79,800

Early Detection of Hearing Loss  
Due to Ototoxic Agents by High-  
Frequency  
Fausti, Stephen, Ph.D.  
\$245,000

Effect of Supported Standing and  
Upper Body Exercise on Lower  
Extremity Spasticity in Persons  
with Spinal Cord Injury  
Fehr, Linda S., M.S.  
\$93,500

Optokinetic Testing for Diagnosis  
and Rehabilitation of Balance  
Disorders  
Fowler, Cynthia G., Ph.D.  
\$105,500

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

A Study to Determine the  
Biomechanical Effects of Shock-  
Absorbing Pylons  
Gard, Steven, Ph.D.  
\$100,400

Development of an Assistive Device  
for Severely Amnesic Patients  
Goldstein, Gerald, Ph.D.  
\$49,700

Development of Improved Middle  
Ear Prostheses  
Goode, Richard, M.D.  
\$75,600

N-Acetyl-Aspartate: A Predictor of  
Outcome in Neuro-Rehabilitation  
Graham, Steven H., M.D.  
\$161,818

Cortical Sensorimotor  
Reorganization in Spinal Cord  
Injury  
Green, Joseph, M.D.  
\$50,000

Soft Tissue Attachment to Proximal  
Femoral Allografts for Hip Revision  
Heiner, John P., M.D.  
\$207,500

Functional Restoration of Grasp in  
Quadriplegia  
Hentz, Vincent R., M.D.  
\$139,900

A Study of VA Stroke Rehabilitation  
Services and Patient Outcomes  
Hoenig, Helen M., M.D.  
\$50,800

Prevention of Recurrent Pressure  
Ulcers after Myocutaneous Flap  
Holmes, Sally, M.D.  
\$59,300

Changes in Auditory Abilities with  
Hearing Aid Use  
Holte, Lenore, Ph.D.  
\$94,700

Development Enhancement and  
Application of the DVA Prosthetic-  
Orthotics Optical Digitizer  
Houston, Vern L., Ph.D.  
\$212,880

Clinical Testing of the Enhanced  
VA-Cyberware BK Prosthetics  
Optical Digitizer  
Houston, Vern, Ph.D.  
\$281,460

Orthopedic Footwear CAD/CAM  
and Diabetic Risk of Pedal  
Ulceration  
Houston, Vern, Ph.D.  
\$477,314

Spinal Cord Injury - Induced Bone  
Loss  
Howard, Guy A., Ph.D.  
\$77,200

Disuse Induced Articular Cartilage  
Atrophy, Over Exercise and Arthritis  
Howell, David, M.D.  
\$91,500

Cause of Male Infertility After  
Spinal Cord Injury and Its  
Prevention  
Huang, Hosea F.S., Ph.D.  
\$178,060

Quantitative Study and  
Augmentation of Cough in Persons  
with Spinal Cord Injury  
Jaeger, Robert, Ph.D.  
\$79,700

Treatment of Sciatic Nerve Injury  
with Gonadal Steroids  
Jones, Kathryn J., Ph.D.  
\$99,700

Gonadal Steroids as Rehabilitative  
Agents After Partial  
Spinal Cord Injury  
Jones, Kathryn, Ph.D.  
\$127,200

Electric Fields and Carbon Fibers in  
the Treatment of Spinal Cord Injury  
Kahn, Talat, Ph.D.  
\$189,000

Enhanced Carbon Filament  
Prostheses As Substrates For  
Regrowth of Injured Spinal Cord  
Kahn, Talat, Ph.D.  
\$129,800

Electric Field Effects on Slow  
Axonal Transport Components in  
SCI  
Kahn, Talat, Ph.D.  
\$174,900



## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Frequency Selectivity Assessment: Implications for Auditory Rehabilitation Kane, James, Ph.D. \$87,300	Comparison of Lower Extremity Artery Size in Men and Women with and without Peripheral Vascular Disease Lee, Bok, M.D. \$25,000	Quantitative Measurement of Upper Limb Spasticity Little, James, M.D. \$38,600
Transport of NGFs + MIF-1 into Spinal Cord Kastin, Abba J., M.D. \$182,548	Biomechanics of Patellofemoral Joint and Peripatellar Retinaculum Lee, Thay Q., M.S. \$41,500	A Biodegradable Device for Peripheral Nerve Repair Madison, Roger, Ph.D. \$141,500
Assessing Information Masking in Listeners with Sensorineural Hearing Loss Kedd, Gerald, Ph.D. \$50,000	Effect of the Bankart Lesion on Anterior Joint Stability with Simulated Glenohumeral Muscle Forces Lee, Thay Q., M.S. \$41,500	Development of Scanning Laser Ophthalmoscope for Low Vision Rehabilitation Maino, Joseph H., O.D. \$293,700
Fracture Occurrence and Healing in Spinal Cord Injured Patients Kiratli, Beatrice, Ph.D. \$86,900	Physiological Basis of Strength Following Surgical Tendon Transfer Lieber, Richard L., Ph.D. \$210,500	Design of a Motorized Prone Cart Malassigne, Pascal \$113,800
The Effects of Spinal Instrumentation Kirkpatrick, John, M.D. \$85,225	High-Frequency Magnetic Stimulation of the Bladder and Bowel Lin, Vernon W., M.D. \$127,700	Factors Leading to Disuse of Low Vision Devices by Visually Impaired Elderly Mancil, Gary L., O.D. \$215,981
Polestriding Exercise and Vitamin E for Management of Claudication Pain Langbein, W. Edwin, Ph.D. \$115,300	Acute Effects of Spinal Cord Injury on Sperm Function Linsenmeyer, Todd, M.D. \$99,100	Use of Tretinoin to Prevent Pressure Ulcers in Spinal Cord Injury Patients Markowski, Janusz, M.D. \$55,800
Physical Exercise Strength Training to Improve the Health of Dialysis Patients Leaf, David, M.D. \$98,250	Eustachian Tube and Middle-Ear Prosthesis Implants: Chronic Ear Disease Linstrom, Christopher, M.D. \$222,084	Problem Solving Strategies of Brain Injured and Normal Subjects Marshall, Robert C., Ph.D. \$67,700
		FES Mobility in Paraplegia: RF- Controlled Implanted System Marsolais, E. Byron, M.D. \$650,600

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Low Vision Enhancement System (LVES) Massof, Robert W., Ph.D. \$535,800	Establishing Standard of Care: Upper Limb Prosthetic Services Monda, Trilok N., M.D. \$82,032	Improvements in a New Technique for Increasing Movement After Stroke Pidikiti, Rama, M.D. \$123,600
Vision Evaluation and Training System Massof, Robert, Ph.D. \$230,600	Electrical Activation of the Diaphragm for Ventilatory Assist Mortimer, J. Thomas, Ph.D. \$259,500	Exercise Testing and Training of Multiple Sclerosis Patients Ponichtera-Mulcare, Janet A., Ph.D. \$154,600
A Pilot Study of Muscle Strength and Functional Performance in Parkinson's Disease Mathews, Thomas, M.D. \$50,000	A Minimal Test Effort for Patients in Pain Using the Back Analysis System Oddsson, Lars, Ph.D. \$181,176	Effects of Medications on Spasticity in Spinal Cord Injury Priebe, Michael, M.D. \$163,000
Long-term Evaluation of Maxillary Sinus Bone Grafts with Dental Implants McAnear, Jon Tom, D.D.S. \$24,120	Optimized Surface Bonding and Stiffness of Femoral Endoprostheses Orr, Tracy, Ph.D. \$99,994	Evaluation of Non-Auditory Factors Which Affect Hearing Aid Use in Elderly Veterans Rappaport, Bruce Z., Ph.D. \$98,500
An In-Vivo Model for Cartilage Regeneration McGuire, Jr., Hunter H., M.D. \$116,300	Compliance Monitor to Measure Patient Wearing-Time for Spinal Orthoses Patwardhan, Avinash, G., Ph.D. \$75,100	Clinical Trial of Footwear in Patients with Diabetes Reiber, Gayle, Ph.D. \$535,617
Development of Quality of Life Measures for Use in Dysphagia McHorney, Colleen, Ph.D. \$88,100	Microphotodiode Tiles as Prostheses for the Restoration of Visual Function Peachey, Neal, Ph.D. \$154,880	Colonic Rehabilitation with Microstimulators after Spinal Cord Injury Riedy, Lisa, Ph.D. \$124,200
Performance-Based Prevention/Rehabilitation of Falls in Elderly Veterans Means, Kevin M., M.D. \$128,633	Functional Neuromuscular Systems for Upper Extremity Control Peckham, P. Hunter, Ph.D. \$393,600	Fecal Incontinence Treatment in SCI Patients Riedy, Lisa, Ph.D. \$49,450

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Effects of Age on Oropharyngeal Swallowing Robbins, JoAnne, Ph.D. \$173,600	Is There an Acclimatization Effect with Hearing Aids? Sammeth, Carol A., Ph.D. \$52,761	Acclimatization in Monaurally Fitted Adults Silman, Shlomo, Ph.D. \$168,203
Back Exercise Prescription and Implementation by Surface Electromyographic Procedures Roy, Serge H., Sc.D. \$223,426	Biomechanics of Foot Deformities and Alternatives for Surgical Correction Sangeorzan, Bruce, M.D. \$91,600	Treatment Strategies in Spinal Cord Injury Role of Spinal Blood Flow Sloan, Tod B., M.D. \$34,000
Effect of Component Placement on the Patellofemoral Joint in TKA Rubash, Harry E., M.D. \$67,300	Fatigue Strength of Composite Femoral Components for Hip Arthroplasty Schutte, Jr., H. Del, M.D. \$126,600	Mechanical Loading Effects on Cartilage Repair and Regeneration Smith, Robert Lane, Ph.D. \$107,600
Restoration of Gait for Acute Stroke Patients Using FES Ruff, Robert, M.D. \$127,000	FES on Spinal Cord Injured Patients: Effects on Muscle Blood Flow and Metabolism Scremin, A.M. Erika, M.D. \$148,000	Randomized Controlled Trial of Upper-Extremity Exercise Training in Patients with Chronic Obstructive Pulmonary Disease (COPD) Sparrow, David, D.Sc. \$137,000
Clinical Trial of Artificial Peripheral Nerve Graft Sabelman, Eric, Ph.D. \$182,800	The Role of Imagery in Auditory Comprehension in Brain Damaged Adults Selinger, Marilyn, Ph.D. \$60,100	Modification of Polyethylene to Improve the Wear Performance of Joint Replacement Prostheses Spector, Myron, Ph.D. \$90,792
Comparison of Semi-Synthetic and Autologous Connective Tissue Grafts Sabelman, Eric, Ph.D. \$50,000	Evaluation of Word-Recognition Performance with Sentence Materials Shanks, Janet E., Ph.D. \$172,300	Developing Veterans Administration Rehabilitation Related Groups: A Pilot Study Stineman, Margaret, M.D. \$49,838
Reliability and Validity of Accelerometric Gait and Balance Diagnosis Sabelman, Eric, Ph.D. \$186,100	Computer-Aided Wheelchair Prescription System (CAWPS) Shapcott, Nigel, M.Sc. \$173,800	Team Characteristics and Patient Outcomes on VA Rehab Services Strasser, Dale, M.D. \$181,820

## SUMMARY OF FY 1997 RESEARCH AND DEVELOPMENT PROJECTS

Vertebral Fusion by New  
Osteogenic Agents to Accelerate  
Rehabilitation  
Strates, Basil S., M.D.  
\$80,700

Cortical Contributions to the  
Recovery of Motor Function  
Strick, Peter, Ph.D.  
\$240,200

Evaluation of Central and Peripheral  
Vision Enhancement Devices for  
Driving  
Szlyk, Janet P., Ph.D.  
\$233,300

Computer Assisted Speech  
Rehabilitation System  
Till, James A. Ph.D.  
\$112,800

Video-Based Functional  
Performance Assessment and  
Training Tool  
Van Der Loos, H.F. Machiel, Ph.D.  
\$39,500

Development of an Assistive Robot  
for Effective Health Care Delivery  
Van Der Loos, H.F., Ph.D.  
\$150,500

An Interactive Video System to Test  
and Treat Nonliteral Language  
Disorders  
Van Lancker, Diana, Ph.D.  
\$89,918

Personal Relevance and Ethnicity in  
Stoke Patients as a Health Care  
Delivery Issue  
Van Lancker, Diana, Ph.D.  
\$49,900

Prophylactic Monitoring of Bladder  
Pressure and Volume  
Walter, John S., Ph.D.  
\$114,200

Analysis and Treatment of Apraxic  
Sound Errors  
Wambaugh, Julie L., Ph.D.  
\$126,000

Measuring Low Vision Reading  
Assessments Using a Scanning Laser  
Ophthalmoscope  
Watson, Gale R., M.A.Ed.  
\$125,700

A Study of Illumination Sources for  
Low Vision Individuals  
Watson, Gale R., M.A.Ed.  
\$93,000

Cultural Influence on Aphasia in  
African Americans  
Wertz, Robert, Ph.D.  
\$84,170

Noninvasive Recording of Bladder  
Pressure in Elderly Males  
Wheeler, John S., M.D.  
\$82,500

Predicting Real-World Visual  
Problems in the Elderly from Vision  
Tests  
White, Janis, Ph.D.  
\$112,100

Improved Bone Cement Fatigue  
Resistance Via Controlled Strength  
Interfaces  
Winter, William G., M.D.  
\$400,581

Immunological Responses to  
Implant Biomaterials Following  
Arthroplasty  
Wooley, Paul H., Ph.D.  
\$197,000

Biological Responses in the  
Pathogenesis of Aseptic Loosening  
Wooley, Paul, Ph.D.  
\$265,900

# Research and Development Career Development Awardees 1997

## HEALTH SERVICES RESEARCH AND DEVELOPMENT SERVICE

David A. Asch, M.D., M.B.A., Philadelphia, PA  
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High quality health care research in VA is possible because  
of the cooperation of thousands of veteran patients.  
Their partnership with VA investigators allows us to do research that  
contributes to the health of veterans and the community at large.

We are deeply grateful to all veterans who have participated in our studies.

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